COLMAN'S RURAL WORLD.

ESTABLISHED 1848

DEVOTED TO AGRICULTURE HORTICULTURE HORSES CATTLE SHEEP SWINE ETC.

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COLMAN'S RURAL WORLD.

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Subscribers should bear in mind that the RURAL WORLD is stopped when the time paid for has expired. To keep up a constantly increasing subscription list we allow old subscribers to send a NEW name with their own for one dollar, and to add at any time NEW names at fifty cents each—but renewals without new names are at one dollar a year. We also allow subscribers to club with the twice-a-week "Republic" or the twice-a-week "Globe-Democrat" at $1.35 a year—thus securing two one-dollar papers at that very low price. We appreciate the kind efforts of our patrons in all parts of the union in speaking good words in behalf of the RURAL WORLD, and it is to these efforts we attribute our constantly increasing circulation.

SECRETARY WILSON'S REPORT FOR 1902.

The annual report of the Secretary of Agriculture for the current year was sent to the President on the 1st inst., and a copy has just been placed in our hands. It contains 122 pages and covers the work of the various divisions of the Department during the last year.

The synopsis which accompanies the report is too voluminous even for publication here, as it would fill a page and a half of the RURAL WORLD.

Some of the momentous subjects are Meat Inspection, Farm Management, Animal Diseases, Plant Diseases, Seed Distribution, New Seeds and Plants, Growth of Work in Forestry, Extent and Cost of Soil Survey, Investigations of Food Products, Good and Bad Insects, Protection of Birds, Progress in Experiments and Education, Farmers' Institutes, Agricultural Relations With Our New Possessions, Irrigation, Study of Foreign Markets, Problems of Road Building, The St. Louis Exposition and a number of other topics.

Perhaps we can not do better right here than present some interesting figures in the conclusion of his report illustrative of the magnitude of the Agricultural Industry.

In 1900 the fixed capital of agriculture was about twenty billions of dollars, or four times that invested in manufacture. In that year there were nearly five million seven hundred and forty farms in the country, covering eight hundred and forty-one million acres, four hundred and fifteen millions of which consisted of improved land. According to the returns of the last census, about forty million people, or more than half of the total population in 1900, resided on farms. Of the twenty-nine million persons reported as engaged in gainful occupations, ten million—more than a third—were employed in agricultural pursuits. The produce of American agriculture in 1899, including farm animals and other products, aggregated nearly five billions of dollars. The most valuable crop was Indian corn, $828,000,000; then hay and forage, $484,000,000; then wheat, $370,000 000; cotton returned $324,000,000, and oats $217,000,000. The animals sold and slaughtered during the year were valued at over $900,000,000, the products of the dairy gave $427,000,000, while poultry and eggs returned over $281,000,000. The concluding statement of the Secretary is that results in the work of the Government for agriculture are justifying expenditures, and "the future will still further show the value of science applied to the farm."

This is enough to make an ordinary brain dizzy. These figures and their significance can not be digested at one sitting; there is food for thought that will last all winter.

The one impressive fact which even the "wayfaring man," though a fool, may read as he runs and not err therein, is the vastness of American agriculture. Now there's nothing commendable in mere bigness in this connection. What we need is better agriculture, not more of it. The Secretary has not recommended a bureau of "Better Methods of Farming," but that is the idea which American agriculturists should keep eternally before them as soon as they get their eyes off the above mountain of figures. The biggest building on earth is the Cheops Pyramid, and what does it amount to? Literally a "whited sepulchre" and a "hollow mockery." For real usefulness as well as architectural beauty it is not to be spoken of in the same day with the Horticultural building or the Dairy building at Columbia, Mo. In these buildings they do things and they do them better. Let us get away from the awestruck attitude of proudly proclaiming that "— — — — is the biggest in the world." Let us so labor and study and plan that it will be written upon the tablets of the world's history, "In American agriculture they did things better than any other."

That will make us the greatest ever, no matter whether we exhaust the figure matrices in the linotype machines or not.

THE ARLINGTON FARM.

Across the Potomac from Washington lies 400 acres of rolling land, which by act of Congress, May, 1901, was appropriated to the uses of the Agricultural Department. It will be transformed into a model farm by Secretary Wilson. Mr. L. C. Corbett, the Horticulturist of the Bureau of Plant Industry, has entire charge and work has already begun.

When this work is completed the whole will become an object lesson of rare value. As a spot of interest to rural visitors to the capital it will rival the Congressional Library, the Patent Office and even Congress itself. Moreover, it will become the experiment station of the Secretary of Agriculture. In this respect the farm can be made a valuable adjunct to the Department and will be so managed as to give opportunity for conducting practical experiments in many lines of work.

Students of agriculture, both theoretical and practical, will watch the development of this plan with great interest.

THE SILO AND THE PASTURE.

Our readers know that we believe in the virtues of ensilage as a "condensed roughage" for nearly all kinds of stock and that we have great faith in the future of the silo as an economic system of harvesting, preserving and feeding that king of all crops, Zea Mays—commonly called corn.

In the corn belt, on high-priced lands, where the stock feeder has a considerable herd, there is no longer any doubt about the superiority of the silage system over all other methods.

Mr. F. S. Peer, one of the courageous ones, who went back to a sterile New England farm and transformed it into a paying property, has set forth in his book on "Soiling" some convincing arguments in favor of that method. Whatever advantages, however, which may accrue to the custom of summer soiling, are true of the offspring of soiling, which is silo-ing.

There may be cases where it would be well to carefully consider all of the facts before building a silo with the intention of making it the main dependence in stock feeding. The corn plant makes the only entirely successful silage, with sorghum as a close second, although it is possible to preserve almost all of the succulent feeds in this way. Therefore those farmers living outside the corn belt would better make some other method of winter feeding their mainstay, unless it is found on experiment that good silage may be made from the materials at hand.

Much may be said in favor of blue grass and other pasture, and where good pastures can be established on cheap lands or where well set grazing lands are already established, it is extremely doubtful if the silo would repay the labor and cost of breaking ground, growing and gathering crops or building and purchasing silos and machinery.

As has been indicated before, this is a matter for each farmer to settle for himself after a thorough inquiry into the merits of various methods. He should adapt to his peculiar conditions the system best suited to his needs. Perhaps a combination of siloing and pasturage would be advisable. The silo will furnish feed at a period when the pasture is unproductive. If properly arranged an extra reserve of silage may be kept on hand for drouth years when the pasture gives out. In wet seasons like that just past, corn harvesting machinery can not be used in the fields on account of the soaked condition of the ground, and by the time the crop could be gathered it is in no condition to be put into a silo. The same wet season would produce abundant pasture and thus the wise husbandman would have his eggs in two baskets, one in each hand. It will not do to discard or condemn either practice. Each should be made to supplement the other.

DEATH OF PROF. GEO. HUSMANN.

On the 5th day of November last, at Napa City, Cal., Prof. Geo. Husmann died, aged seventy-five years. Prof. Husmann was one of the pioneers of Missouri horticulture. In his early manhood he had large orchards and vineyards and nurseries at Hermann, Mo. He was one of the founders of the Missouri State Horticultural Society, and took a very active and prominent part in all the discussions of that society, while a resident of this state. He became an enthusiast in grape culture and wine-making. The civil war came on, entailing great loss in his nursery business, as he was unable to dispose of the large stock of trees and plants that he had been producing, and he quit the business, and together with Isadore Busch and Judge Samuel Miller, embarked in the business of growing grapes and making wine on a large scale at Bluffton, Mo. This enterprise did not turn out financially successful, and soon after he filled for a term of three years the chair of Pomology and Forestry at the Missouri State Agricultural College. In the mean time he published the "Grape Culturist," a monthly journal devoted to grape culture and wine-making. After several years' publication it was united with the RURAL WORLD. He was also the author of a book entitled "American Grape Growing and Wine Making," which has passed through four editions. Some twenty years ago he removed to California, where he has been engaged in grape growing and wine manufacture. For the past forty years or more he has been a frequent contributor to the RURAL WORLD. In all the relations of life Prof. Husmann was a most exemplary man, honest, earnest, philanthropic and doing his best on all occasions to enlighten and elevate his brother man. In all the meetings of the various horticultural societies he attended, no one was listened to with more interest or profit. His style was simple and lucid and it was a high pleasure to hear him talk. His large number of friends in Missouri and elsewhere will be deeply pained to hear of his death.

PEBBLES FROM THE POTOMAC.

Editor RURAL WORLD: Picking up a popular New York City publication recently we became interested in an article which endeavored to explain the amount of money necessary to enable a young society man to live up-to-date in this new century. From the article we learned that an unmarried society youth might, by practicing economy, get along on sixty thousand dollars per annum, and, in fact, could enjoy many luxuries. From the general trend of the article we were led to infer that an additional ten or twenty thousand dollars would come in conveniently for incidentals. The article is valuable only in striking a comparison of the two extremes of the economic conditions of society of the present day. The reckless extravagance of the millionaire accentuates the deplorable condition of the industrial slaves of the sweatshops, men, women and children breathing the foul atmosphere of the slums which condemns them inexorably to disease and early death. What a tragic condition in the midst of our civilization! When we read the horrors of the sweatshop system we are reminded of La Bruyere's description of the peasant vassals of his day, "A kind of gloomy, timid animal, emaciated, living in dens, eating grass on all fours, covered with rags, feeling affrighted at the approach of other men, bearing the semblance of a human being, and yet being a man." The circumstances surrounding the laboring man in the great cities to rise above his undesirable condition is too often utterly beyond his control, and a humble submission to the inevitable is his only recourse, and after vainly struggling in the horrible whirlpool of strife and contention, is carried onward by the treacherous and seething currents of fate, eventually engulfed in the ocean of oblivion. Human reason revolts at such a picture! We believe that the increasing poverty among the masses and increased accumulation of wealth and property in the hands of the few, portend grave catastrophes looming up in the realms of political economy. In our preliminary observations, we have not taken a gloomy view of the condition of society to-day simply to draw a sombre picture on the canvas of events, but it was with an object in view of comparing the relative conditions of the two extremes of society—the industrial slaves of the foul sweatshops and unsanitary tenement hovels vs. the lavish squander of the man of wealth, the Luculius-like banquets of the popular society man, the dazzling diamonds—all these forming a striking contrast of human life. When these conditions are equalized—and let us hope they will be some day—the optimistic political economist can then revel in the fancy that the true Golden Age has materialized and the mountain peaks of adversity truly tipped with gold by the rising sun of universal Prosperity.

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THANKSGIVING.—To-day is Thanksgiving Day, and surely no class of people can consistently enjoy the occasion better than the farmer. November finds him with his season's work far advanced or practically finished. The barn is filled with the product of the field, the cellar is filled with good things to eat. Rows and rows of canned fruit attest to the skill and industry of the housewife. Boxes of nuts demonstrate the fact that the boys have been active and have contributed their mite toward providing pleasant features for the long winter evenings. Truly, the Pilgrims inaugurated a pretty custom when they set aside a day for recreation and thanksgiving.

Washington, D. C. S. F. GILLESPIE.

A MISSOURIAN IN TEXAS.

Milo Maize.

Editor RURAL WORLD: Since writing you last I have taken a short trip west on the Texas & Pacific railroad and met my old friend, Mr. Stewart, at Strawn. I told him I had been investigating the fairy tale he had told me about "Johnson Grass" on my previous trip, and had to apologize for doubting the veracity of his statement: "Oh! Johnson Grass is all right; it is a great boon in this dry country, where our corn crop is so problematical. We have missed our corn and wheat crops for two years now in succession, and Johnson Grass has been my salvation for forage for my stock, but I was west at the Abilene fair last week and find there is a new forage crop that just suits this climate and is away ahead of Johnson Grass in that it furnishes both fodder and feed. I will tell you about it and you can investigate for yourself. The name of the new forage and feed crop which is to replace "Johnson Grass" and sorghum for fodder, and corn and cottonseed for fattening cattle and hogs, to keep our Fort Worth stock yards going is called Milo Maize. Did you ever hear about it? You know it by name only! well; I will tell you what I know about it. There was lots of it shown at Abilene fair last week, and hundreds of acres of it are grown in that district. It grows just like sorghum cane, from three to five feet tall. Its head is closer and more compact, the seeds are about the size of No. 2 shot, brown in color and make the finest kind of feed for hogs and cattle. The fodder is not full of sugar like sorghum, and can be cured like corn fodder and is superior in quality to that kind of roughness as grown and cured in this semi-arid section.

"When planting, it is drilled in, about one to two feet apart, is cultivated once or twice like sorghum. When seeded out the heads with the seed are cut off about one or one and a half feet from the top. This will make 50 to 90 bushels of seed to the acre, which contains from 85 to 90 per cent of the nutrition contained in corn and is fed in the same manner to hogs and cattle, but the seed is not all. When the heads are cut off a lot of new shoots spring out of the stalk at the first joint below where it has been cut off, and these make a bunch of from five to fifteen small heads of seedlike corn nubbins. When these are sufficiently matured, a harvester is used and the crop is shocked and stacked for use. As a roughness it is equal to the best corn fodder and, in addition, has about 25 to 30 bushels of seed to the acre, which makes it both roughness and feed that will keep growing stock in fine condition all winter. I have arranged for seed and am going to give it a good trial next year. This is no wild chimera or Texas hot-air blast. You will just see hundreds of acres of it all along the road out to the Pecos river, and in two years from now you will see thousands of acres for every acre you now see. The boys I met at the Abilene fair told me that you can fatten hogs on the seed almost as fast as you can on corn, and the fodder, unlike sorghum, can be cured and fed "ad libitum" without danger. Yes; look it up; you will find I have been telling you the truth."

Subsequent inquiry developed the fact that those farmers of the "cross timbers" or post oak district of Texas, who had visited the Abilene fair, were as enthusiastic as Stewart, and the result will be a universal trial of Milo Maize next season in that section.

I met one gentleman who had just returned from a ten days' trip to the Pecos valley irrigation district, who told me that between alfalfa and milo maize they were growing and fattening hogs as well in that section as in the corn belt. And in the arid region west of Eastland county and all up in the Panhandle milo maize was now generally grown, and that in the next few years he thought it would be generally grown all over western Texas. Naturally it had got its first start where it was literally impossible to grow corn, but the two years of failure in the corn crop in Central Texas had drawn attention to the use of milo maize as a substitute in the semi-arid districts. A gentleman on the Dallas prairie has been growing and feeding milo maize for a number of years with uniform success. He gave his experience through the columns of the Dallas "News" last spring, which attracted widespread attention amongst Texas farmers generally.

I have not been west beyond the point where they try to grow cotton, and have not seen any milo maize, at least not to recognize it as such, but from what I have learned from a variety of sources, more or less authentic, it is the coming fodder and feed crop for the arid and semi-arid regions. Just how it will do in the corn belt proper I cannot say, as I have not given the matter any attention, but if half what they say about it is true it will certainly be the salvation of this portion of Texas, which will always have to largely depend on stock for its principal source of revenue, and with the short grasses in summer and a reliable forage crop for winter, the beef production would be largely increased.

Since writing the above I have held it up to give this matter a little closer study and investigation. I find that milo maize is one of the non-saccharine canes. I saw quite a breadth of it grown in Oklahoma, some of it in its first growth like sorghum cane. Some patches had been previously headed off and showed a second growth of three to four feet high, and did not show the forest of nubbin heads predicted by my Texas friend, but would make a large amount of roughness if reaped and shocked. I also saw some of it in the shock, harvested as a single crop.

I observed some small patches on the rich soils of Central Missouri, where it grows in great luxuriance, but would think that in the Corn Belt this crop would be out of place and would only be valuable as a substitute for corn in the semi-arid regions of the south, where its deep rooting characteristics enables it to thrive on a minimum of moisture, and where the fodder is not apt to be spoiled by excess of moisture while curing, which would be the case in the moist regions of the Corn Belt, where it would be bleached and dried into inert organic matter.

It has an advantage over sorghum, in that it can be readily cured in quantity and fed without restraint as a roughness. The excess of saccharine matter in the former making these impracticable.

If half what is claimed for it is true, it will be a boon to the farmer of the semi-arid regions of the south, in the latitude of the cotton belt.

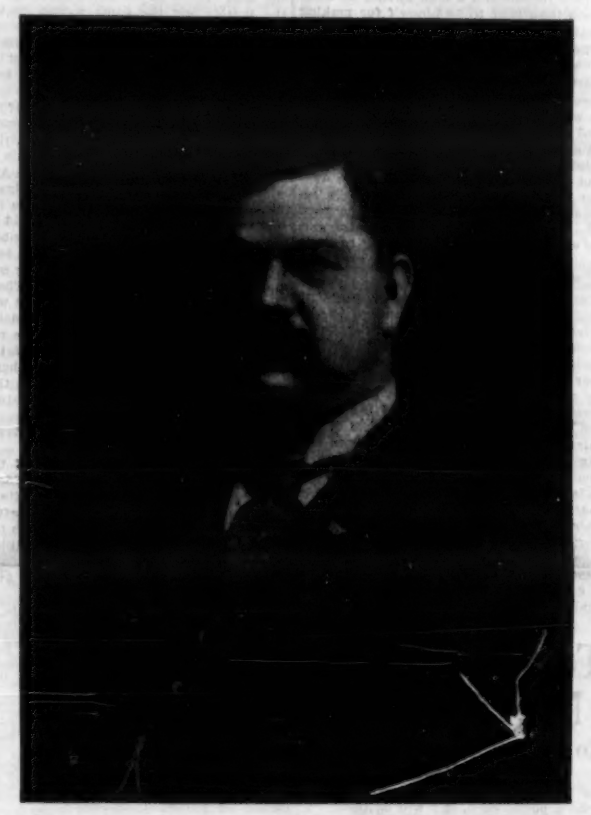
It would be of interest to the readers of the RURAL WORLD to hear from some of those farmers who have had experience with it in those regions.

THOMAS LAWSON.

JUDGE W. R. WILKINSON.

We present to our readers this week in our portrait gallery series the likeness of a native Missourian, and one who has gained considerable prominence as an agriculturist and fruit grower.

Judge W. R. Wilkinson was born Sept. 7, 1854, in Perry County, Missouri, on the



W. R. WILKINSON.

banks of the Mississippi river, midway between St. Louis and Cairo. He spent his life in that part of the state until 1896. He was educated in the public schools of Perry county, the Normal University at Carbondale, Ill., and at the Agricultural College in Columbia, Mo.

He owns 1,400 acres of land all under cultivation in Jackson Co., Ill., and a large fruit farm in Perry County, Mo. His orchard there comprises 4,000 Kieffer pear trees, 6,000 peach trees and 17,000 apple trees. He is a great friend of the much-abused Ben Davis apple, and contends that for dollars nothing is equal to it for the grower.

Judge Wilkinson was for fourteen years Judge of the Perry County Court; he was the youngest man ever elected to that position, and during this time there was only one member of the opposite party who opposed him.

He was appointed a member of the Missouri State Board of Agriculture first by Gov. Stone, reappointed by Gov. Stephens, and again by Gov. Dockery. He has been President of the Board for the past two years, and has filled that position with credit to himself and to the state.

He was selected as Superintendent of Exhibits at the recent meeting of the Apple Growers' Congress in this city, and it was largely through his efforts that this meeting scored so signal a success. Upon the permanent organization he was elected First Vice-President of the American Apple Growers' Congress.

For the last six years he has resided in St. Louis as the senior member of the firm of W. R. Wilkinson & Son, doing a general commission business in this city.

Mr. Wilkinson takes great interest in the development of Missouri as an agricultural state, and believes firmly in the high place she is taking among the galaxy of sister states.

GOOD AND BAD ROADS.

Editor RURAL WORLD: In your issue of Nov. 19, 1902, I read with much interest the article on the "Good Roads" question, written by John Bethune, of Lincoln, Neb. I also see that Martin Dodge, director of public road inquiries of the Department of Agriculture in Washington, advises Congress to make an appropriation to construct a section of brick wagon wheel tracks in the vicinity of all the county seats in the United States, as object lessons. This same thing was done in the rural route system as experimental. Now that system has become a settled policy, and is greatly on the increase and spreading rapidly, in my judgment Congress should do as recommended by Mr. Dodge, and think the start once began, like that of the rural route system, would advance rapidly and precede the mail carriers, which in every case it should do. The article from the pen of Mr. Bethune was interesting and instructive. I heartily concur with him in that the general government should take the lead in this matter, and then the states and counties. By concerted action the desired end will be accomplished.

Mr. Bethune speaks of being in a state where he occasionally in rainy seasons gets "stuck in deep ruts." Well, I consider him very fortunate to get out at all. Were he in some portions of Missouri, in those vastly rich fertile lands, in wet seasons he could not travel in the lightest vehicle, with the best team of horses ever in Nebraska. My business is surveying, which requires almost constant travel over these nameless, would-be public highways. It sometimes happens that I cannot possibly use my buggy on account of the terrible condition of the roads, and am compelled to go on horseback and then occasionally have to pull down barbed-wire fences to get around those impassible "Deep Ruts," as Mr. Bethune calls them.

The condition of the public highways just marks the stage of civilization in this and all other countries. As I have before written, "three things mark the stage of civilization in all countries, the first of which is the public highway, then comes churches and schools, but of what avail are churches and schools without roads to get to them." In his savage and uncivilized state, the wild man roamed the forests, following winding paths through vale and over mountain, caring for naught but the wild beasts of the forests. When civilization began in this country, and before the wild man could be subdued, the advancing army had to construct roads to penetrate the forests, which were the first steps in civilization. This road question reminds me of Sam Walter Foss' poetry, "The Calf's Path," which appeared on the Dairy Page last week.

This country is strictly following that calf through those horrible mud holes, and in my judgment will continue so to do, until the general government takes this matter in hand and inaugurates a perfect system of road improvement, and that of irrigating the arid regions of the west, and then all will be a complete success. J. Y. POWELL.

FARMERS' INSTITUTES.

A unique series of Farmers' Institutes was inaugurated Monday, Dec. 8th, by the united forces of the Missouri Agricultural College, The State Board of Health and the co-operation of the Missouri Pacific Railway. The series covers a period of two weeks and is in the nature of an experiment. The Dean of the Agricultural College, the Professor of Horticulture, the Professor of Dairying and the State Veterinarian, as well as others, will give to these meetings an interest and value rarely afforded in such enterprises, and we trust the farming community will respond in a way that will insure the greatest good for the greatest number. The peculiar feature of this proposition is the special car which will be on exhibition at each place. This car has been fitted up with a varied agricultural exhibit of an educational nature. Our readers will hear more from this trip in our next issue.

Circuit Attorney Folk has won every game in the series. Chas. J. Denny, Boodler No. 7, gets two years for perjury. All good citizens are looking over your shoulder, Mr. Folk, and hope you'll make it 16 to 0.

NEWS AND COMMENT.

Our correspondent, "Buff Jersey," has the courage of his convictions in the matter of ensilage. He feeds it to his pigs and in our swine department appears a letter from him telling how he does it.

The Bureau of Soils, Department of Agriculture, have found a section of Texas adapted for the growth of Cuban tobacco. Extensive tests will be made during the coming year. The product might be used for making Lone Star plug.

A rice kitchen at the World's Fair will exploit the virtues of this cereal as a diet and also the rice industry in the United States. The American Rice Association desires to serve rice meals in the building at a nominal price per meal. It will no doubt be a swell affair.

A national figure of prominence disappears in the demise of Thomas B. Reed. Regardless of his political faith, he was a great man, although he never filled a higher position than speaker of the National House of Representatives. He had, perhaps, the greatest brain and most force of any man in recent times.

Prof. John T. Stinson, who has had charge of the Missouri Fruit Experiment Station at Mountain Grove, Mo., since its establishment, has just been appointed Superintendent of Pomology in the Department of Horticulture, World's Fair, 1904. A good man in the right place. We hope to give our readers a sketch and portrait of Prof. Stinson in our next issue.

Unfortunately the question of statehood for Oklahoma, Arizona and New Mexico has got badly boggled up with political considerations of a practical nature. Obstructionists may as well get off the track. The statehood express is coming down the line with steam on and "clear track ahead" signal. The present generation want to see a big part of the development of the great southwest before passing the job over to the next.

Dr. W. A. Thomas, State Veterinarian of Nebraska, says the farmers of his state are throwing away $25,000,000 annually by wasting their corn fodder. Moreover, he says that with proper curing of fodder, the cornstalk disease would disappear. The way the good Doctor scores the shiftlessness and wasteful methods of Nebraska farmers makes Thomas Lawson's mild rebuke of Missouri mossbacks seem tame in comparison.

It is hard to believe the report that the labor unions will oppose the placing of mail boxes on street cars because this would add federal protection in case of strikes. The leaders of strikes have usually said in advance "there will be no violence," which is in itself condemnatory. Why should there be? But if violence is to a cardinal tenet in the creed of the labor unionist the sooner mail boxes are put on street cars, the better. We can not believe that Samuel Gompers will stand for such doctrine.

Thomas Nast, the famous cartoonist, died of yellow fever at Guayaquil, Ecuador, Dec. 7th. He was the American Consul General to that country and was perhaps the most noted and the most original member of our American school of pictorial art. He gained his first prominence as a caricaturist in the days of Boss Tweed and the peculations and rottenness of the New York "Rings." His peerless political satires accomplished more against corruption in government affairs than all the bitter invective evoked by the trying conditions of those times.

The packers have begun to advertise oleomargarine in the daily papers. Why do they need to use the name of a famous breed of dairy cows and abort the word "butter" in their claims of superiority? If oleomargarine is all they claim for it, why is it not offered on its merits? The truth is they do not wish to sell oleomargarine as a substitute for butter. Their constant efforts down to date have been to sell it AS butter. This is the whole thing in a nutshell and this is the basis of opposition by every fair-minded and law-abiding citizen, whether he makes or eats butter.

An interesting food test is being conducted by Prof. Wiley, the chemist of the Department of Agriculture. Twelve young men of the Department have volunteered and half are to be fed pure food prepared in the official kitchen, and the other half will be fed the same kind of food containing preservatives, coloring matter, adulterants, etc., of the kind commonly used in many of our commercial forms of foodstuffs. None of the young men know to which class they belong, the factor of imagination being thus neutralized. The experiment will continue about six months and a careful record kept of changes of weight, temperature, pulse and general health.

M. Sven Hedin, a well-known explorer, brings a story out of the Thibetan orient, which should encourage the writers of sensational fiction of adventure. The inventiveness of imaginative writers is based on natural phenomena and no pipe dream, swash buckling, hair-raising story writer has depicted anything so uncanny and gruesome as Dr. Hedin in the report of his terrible experiences in this "land of death." We have a death valley of our own out on the western fringe of the alkali plains which is a pretty tough proposition to run up against, but it is mild compared to the horrors of the dreary waste in the rarefied air of Thibet's elevated plateaus. Verily, truth is stranger than fiction.

The Dairy

HOW CAN THE MISSOURI FARMER NOT IN REACH OF A CREAMERY BE A SUCCESSFUL DAIRYMAN?

Read at meeting of Missouri Dairy Association, Columbia, Nov. 12, 1902, by John Patterson, Kirksville, Mo.

If the farmer is not in a locality where the milk will sell, he must learn to make a good edible and salable article out of the milk. It can be made into butter or cheese. Before he undertakes it, he should calculate how he can make dairying pay better than the growing of corn or hay, or the raising or cattle or hogs for sale. That will depend upon how much you make, how well you make it and how successful you are in selling it. If you make a good article of butter it must not go to market as common, country butter, but must be made and put up in marketable shape, so that in the opinion of the merchant and consumer it can compete with creamery butter. You can best learn dairying by taking a course in dairy instruction at our experiment station. If you cannot go there yourself, and have sons, daughters, send them there, or hire some one who has taken a course in dairying at that institution, or pick out a good girl or boy and send to the dairy school with the understanding, when he has finished the course he will work for you. If you cannot do this, do not give up, you can learn by talking with some one who knows the business and by reading good dairy papers. The old saying is true "Where there is a will there is a way."

If you tell your neighbors of your intention to try that kind of work, you are sure to get discouraging advice. They will tell you how much work there is in it, how many have gone at it and failed. They never know or tell how many have worked at dairying and paid for their farms and built good, comfortable homes and made comfortable livings thereby. You can go into parts of the country where dairying is the principal occupation and find that dairymen have succeeded in their business and their land is not worn out.

How can one make a success at dairying? Start with good cows, but do not be too quick to condemn the cows you have till they have had a fair chance to show what they can do. A cow on poor pasture, on corn and timothy hay, exposed to all sorts of weather does not have a chance to do her best for you. Give her good pasture and feed her plenty of good feed. If when fresh she does not give 20 or 30 pounds of milk, testing three per cent or more, you may consider that you have a clear case against her and you may sell her to the butcher and find some way of getting a better one. Your success depends on good cows and good, plentiful feeding of the kinds of feed that produce the most milk, giving your cows comfortable quarters and kind treatment. You need not take the old woman's notion to kiss the cow, but I believe a cow will do better if combed, brushed and stroked. Some people believe they can break a cow from kicking by beating her with milk stools, sticks or clubs. I think it always makes her worse and would advise any one not to do it.

Now about the feed: I spoke of corn and timothy hay being not the best feed to produce a good flow of milk. Clover is much better than timothy hay, but corn, when just out of the roasting ear and commencing to glaize and dent, while the blade and stalks are green, if run through an ensilage cutter and put in an air-tight silo, will keep its natural succulence and is the best winter feed; the nearest approach to green grass in the summer. I use common field corn, big or little, as I have it. I have four silos, one holds 300 tons, the other three 100 tons each. I raise cow peas to mix with corn in the silo, alternating a load of corn with a load of cow peas and in that way I think I get a better feed than corn alone would make, and am well pleased with this way of preserving feed for stock, not only cows but young stock and horses. I have found no better way of getting valuable feed; it makes a very busy time when we are putting it up, but when that is done, we have good feed whenever needed.

It took fifteen men and a twelve-horse power engine nearly six days to fill my 300 ton silo with cow peas and corn. Six of these men were detained until 9 o'clock in the morning and quit work at 4 o'clock in the afternoon to do the milking, but the other nine commenced work at 7 in the morning, had an hour at noon and quit work at 6 in the evening. They used six wagons and teams. I paid the extra hands $1 a day, without board; I paid for the engine and engineer $5 a day, so it cost me about $120 to fill a 300-ton silo. I winter each cow on four tons. I found it took from seven to ten minutes to run a load through that we estimated weighed more than a ton.

I want to speak of the benefit it would be to the farmer to engage more extensively in dairying. If rightly conducted, he can make more money thereby and have a better farm. It makes more work, but the profit pays for the excess of work. I do not like to speak of myself, but venture to do so for your benefit. The year 1901 was certainly our hardest year. I had only enough feed for 400 tons of ensilage and very little hay in the fall. I doubted whether it was best to use what feed I had and attempt merely to keep my stock alive till spring, or buy feed to make the cows give enough milk to pay for the feed. I wondered if I could make any profit with hay at $13 to $15 per ton, Alfalfa shipped from Nebraska, bran at $20 to $22 per ton, cotton seed meal at $26 to $28 a ton, and pay six hands to do the work. I undertook to give my cows good feed so that they could pay for it, and they did. I bought $1,500 worth of feed and came out with very little pay for my work, but when spring and grass came and we quit feeding, my cows looked well and gave a good flow of milk, which they could not have done had they not been well fed during the winter, and we sold over $100 worth of butter a week for a considerable time. I do not know just what I could have done had I had beef cattle, but I suspect I would have had to sell them to pay for the feed and had nothing to make profit with; but my cows paid for their feed and were ready to make more for me. I advise farmers to go into private dairying. You can churn and make the butter as easily as you can take it to a creamery, if there is one near you, and you do not have to suspect the creamery man does not test your milk right; and will have all the skim milk and butter milk to feed your calves and pigs.

I want to advise you about apparatus for making butter. If necessary for a little while, use what you have, but as soon as possible get a good separator and a good churn and when you get tired of a hand separator, use some kind of power and build a suitable room for it. I have used a two-horse tread power for six or seven years, but last spring I got a four-horse gasoline engine and I like it best.

DISCUSSION.—Mr. Patterson:—When I first went into the dairy business a man came along and tried to get me to buy a separator. I did not think I needed one, but he was persistent and showed me I was just losing a dollar every day by not getting all the butter fat that the milk contained. If dairying is not rightly conducted it will not pay expenses. So many of our farms are so badly managed, the land just sown and re-sown in corn until its fertility is all gone; but even with the proper rotation of crops I believe there is more money in dairying than on a common farm. In dairying you get your money every week, while in raising hogs and cattle you have to wait so long before you get your returns and this makes a big difference, so I think the dairy business is preferable. Then dairying does not deplete the land as does ordinary grain raising.

Prof. Eckles:—Most farmers in this State are not situated like Mr. Patterson in regard to the number of their cows. Most farmers of this State have only six to ten or twelve cows. Would Mr. Patterson recommend a man having no more cows than that to fit himself for making butter or sell his milk to a creamery or separate his cream and ship it to the creamery?

Mr. Patterson:—Circumstances alter cases. A man should be his own judge as to what is best. If he is near a creamery and has confidence in it that it can make as good an article of butter as he can, it might pay for him to sell them his cream. But I was speaking of the man who does not live near a creamery. There is no creamery near us. It will pay the man who has ten cows to get a separator and he will soon have enough money to have twenty cows. I always advise a good sized separator.

Mr. Erwin:—I want to corroborate what Mr. Patterson has said in regard to the private dairy. After quitting the dairy business for a number of years I drifted back into it and am milking some twenty-four or twenty-five cows. I make my butter at home and I find that it brings in a very comfortable income and I think pigs and chickens are a natural adjunct of the dairy. I have found since I have been engaged in the business of dairying in a smaller way that the actual number of dollars and cents gained have been greater than when I ran it on a more extensive scale. You cannot take ten cows and get as good results in proportion as you can from one cow, and when you increase the number to 50 or 75 or 100 cows, the amount of gain per cow is much more with the smaller number of cows.

SOME POINTERS FROM TWENTY YEARS' EXPERIENCE IN THE RETAIL MILK BUSINESS.

Read at the meeting of Missouri Dairy Association, Columbia, Nov. 12, 1902, by Mr. A. H. Shepard, Columbia, Mo.

The point that I have always found most necessary in supplying the milk to the city market is that you should always have an adequate supply, not only of good, pure new milk, but of good cream, good sweet skim milk and sour milk. There is a demand for all these, and if the customer fails to get them then they revert back to the town cow and you have lost a customer, but if you are always ready to supply the demand there is no trouble in maintaining a good trade in a town like this. It is important, of course, absolutely necessary, that the goods you offer are of such a quality that your customers can have perfect confidence in you. They must be sure they are getting a good article. Nothing makes a man so mad as to get something to eat and find that it is not good, it makes him mad all the way through.

It is important to have a good herd of cows. I was impressed with a little point made by Mr. Patterson—I do not know that I can express it as he did—while a good herd is important, a good herdsman is of greater importance. I would rather take a scrub herd in the hands of a thoroughbred herdsman than a thoroughbred herd in the hands of a scrub herdsman. I have found that out by experience. I have seen very fine herds in the hands of bad herdsmen and the result was simply a loss, while I have seen common herds give good results when in the hands of a good herdsman.

The thing is to produce a good article and deliver it to the customers regularly, carefully, promptly and in a nice condition and they will be satisfied, and my experience is that it is more profitable than the making of butter or cheese. In all I have had about thirty-three years' experience in dairying, seventeen of which have been in the retail milk business and the others in butter and cheese making, and as far as profits are concerned, I find much better profits in selling milk and cream where you have a good market than there is in either of the others.

For retail trade we put the milk in bottles. It is a little more expensive but gives better satisfaction.

DISCUSSION.—Mr. Irwin:—Did you not find the percentage of loss in measuring is more than made up by the price of the bottles?

Mr. Shepard:—No. You will save some in measuring, but it will not make up for the loss. There is too much breakage in the bottles and the same wagon cannot carry as much milk, the bottles occupy about three times the space. The milk is poured into the bottles and these put up in cases and the spaces between the bottles are filled with crushed ice.

Mr. Smith:—Do you test your herd?

Mr. Shepard:—Yes, and I find customers do not care so much about the extra rich quality of milk as they do for the milk to be pure and nice and well flavored. And it is important in securing a good flavor to the milk to be very particular as to the feed of the cows. The pastures should be as nearly free from weeds as possible; there should be good grass and the feed should always be first class. I never buy any corn unless it will grade No. 2. There is a great deal of corn shipped in that will not grade and it is not fit for the dairy cow. If feed is slightly musty it is not fit for dairy cows. At this time of the year I supplement the pastures by wheat. Sow wheat each year early and at this time of year it makes a very fine pasture and it produces a good flow of milk.

Mr.———:—Does it not spoil the flavor of the milk?

Mr. Shepard:—Not at this time of the year. If cattle are turned on it suddenly in the spring, it will make quite a change in the flavor of the milk, but after they have been on it two or three days the milk has no objectionable flavor. I think it is mostly the change of flavor, there is nothing bad about it as soon as one gets accustomed to it.

Mr. Erwin:—Is not this flavoring due to the indigestion of the animal rather than to the feed? If you do not permit them to take full feed, but only partial feed so that there is no scouring, you will not observe it at all.

Mr. Shepard:—I think they will observe the flavor anyway. It is often different from the flavor given by the winter feed and that is why they notice it; but as soon as the customers become used to it it is all right, but they are apt to be suspicious of a sudden change.

I never use the milk of cows far advanced in pregnancy. A cow should be allowed to go dry at least two months before calving time. The flavor of the milk is bad several weeks before calving. A cow will give more milk and better milk by milking her ten months and allowing her to go dry two months than by milking her the whole 12 months, and you can get a stronger calf and one less liable to sickness.

Mr.———:—A farmer I knew pastured wheat right down to the ground. Could he do that every year with success?

Mr. Shepard:—I do not think it hurts it much. Two years ago I pastured till the first of May and the result was good, I took the cows off the wheat and got 26 bushels to the acre. That is the largest yield I have had from wheat pastured. The way I do generally is to pasture it to the 10th of May, then plow it up and sow it to cow peas and get the cow peas off by the first of September. The ground is then in fine condition for wheat, and by simple sowing without working it you can get a good crop of cow peas and pasturage for several months.

Mr.———:—Don't you think there is a way to overcome the flavor of grass or rye in milk. Give them dry feed a couple of hours before milking. I do that way.

Mr. Shepard:—My practice is to put the cows on it just after milking in the morning and let them stay one hour, the cows will fill and sometimes look like they were bloating so they could not get their breath from the wheat, and then I do not let them run on the wheat any more that day.

Mr. Smith:—Do you pasteurize your milk?

Mr. Shepard:—No. I sterilize the bottles but do not heat the milk.

Prof. Eckles:—What is the best way to dispose of your surplus?

Mr. Shepard:—If there is a surplus, make it into butter and feed the skim milk to hogs. Of course if there is a creamery near by, it would be better to send the surplus milk to the creamery.

Mr. Patterson:—Do you ever have any trouble with the flavor of wild onions in milk?

Mr. Shepard:—I have not had any trouble on that account for years. The way to prevent it is to feed the cows very liberally at the time, for the cows will eat onions only when they are hungry. Another thing that damages milk is bad water. A thing of the greatest importance is to give your cows good pure water and not a muddy branch to drink out of and give them good clean troughs.

A FABLE FOR HUSTLERS AND OTHERS.

Away Off among the Cornfields of a Great Corn State where Dairying is Pretty Thick in some Spots and Pretty Thin in Others, there were Quite a Lot of Farmers each of whom owned Several Cows. Most of them had got into the Habit of Milking Cows, and thus there was a little Butter made in Excess of what the families generally could Consume, and the Surplus Product naturally found its way to the Village Emporium where it was not Too Critically examined and sent to Market.

It was the Size of these shipments that Inspired the Keen Solicitor to visit Farmertown and inoculate the Peaceful Denizens thereof with the virus of Creamery Enthusiasm, which he proceeded to Do at about One Hundred Bucks per Enthuse. The virus Took most Beautifully, so that no Two Farmers could chance to Meet without Asking each other what they thought of the Project, and saying that it was their Intention to "Go In."

When the Prospective Patron gets it with that Intensity the thing to Do is to Show him where to sign his Name and then order the Lumber by Telegraph. Mr. Keen Solicitor was no Caboose Engineer when it came to Knowing when he arrived at the Station, and so the Contract with all its written Names and His X Marks was soon Completed, and the Ink Scarcely Dry when the Stakes were Driven to mark out the Foundation.

Thus, Little Children, we Learn that Hustle may corner the Peaches while Opportunity is still getting ready for Breakfast.

The Creamery was Built as per Program, and was a Really Good One because the Company behind the Solicitor put Honest Merit in their Buildings, knowing that if they built Well the new plant would almost Surely be a Success, and there would Follow many nice Orders for all kinds of Supplies needed in the Manufacture.

Therefore to Him who gives the Money's Worth at the Beginning, it shall be returned Ten Fold, for Reciprocity is an Engine that pumps Both Ways.

This Accidental Reference to Motive Power switches the Train of Thought back to the Main Line and the Real Story.

The Patron whose Attic Works were always Oiled Up and ready for the Whistle, was among the First to be Approached on the Proposition, and at once the Works got the Busy Signal. It didn't take but a Minute to become an Enthusiast, and then an Enthuser, and so it was that the Keen Solicitor had the Situation well in Hand the Very First day. Nor did the Patron slack up the Speed any after he got Home. "Now that we are to have a Creamery," he said to his Family. "We can Branch Out a little more in our Dairying. We will Cut Out the Home Churning and will send the Whole Milk. The Barn will be Enlarged for the Winter, and Next Summer we shall have a Silo to store up some Green Fodder for the Cows. While we are Enjoying the Canned Tomatoes and the Preserves during the Winter Days, and reminding ourselves of the Good Old Summer Time when we picked them from the Vines, the Cows can eat their Silage and imagine they have Broken Into the Cornfield just when the Ears were Glazing over the Milk. And it will make them Give Milk and Lots of It, Too."

"But Where will you get your Milkers?" said a Feminine Voice at the Other Side of the Table. "You know the Hired Men Generally Dislike to Milk and will not Do it without much Grumbling."

"Oh, well, I guess you can Rest Easy on that Score," said Mr. Patron. "I just had a Talk with Mr. Jonathan about That after I had done a little Figuring, and he has Agreed that Milking is Alright if made a part of the Day's Work and not Tacked On as an Extra. We will take Two Hours off from the Field Work to do the Milking and Extra Chores—an Hour each Morning and Evening—and be Better Off for it at the End of the Year. After working in the Field, that Hour of Milking will be a Restful Diversion instead of a Burdensome Chore."

"The Idea suits me allright," said Mrs. Patron. "But there may be Sunday Nights and Holidays when Jonathan may want to Stay in the City."

"Well, when it Comes to That, I guess I ain't too much Starched Up to Interview a few cows Myself, and say a Nickle a Cow to Tommie and Jane to Assist Me, should Think we can Manage It."

"Anyhow, be Sure that the Creamery Board hires a Good Buttermaker."

"Don't let that Worry you any Longer than it takes to Think It." said Mr. Patron. "When we come to That, you can rest Assured that 'Keeping Quality,' as they say in Buttermaking, will be considered more than Price," and he Chucked a little Chuckle beneath the Surface of his Vest.

Mr. Patron not only boomed the Creamery, not only Expanded his Dairy Interests, not only hired a Buttermaker who was Alive clear through Up and Down and Crosswise, but he kept the Attic Works going Full Time on all the Best Literature, connected with the Motive Power of all the attainable Conventions, took a Few Volts of Energy from his State Agricultural College, and Once in a While got the Belt shoved onto the Main Pulley at Washington.

There never was an Idle Minute nor did Mr. Patron Want any. Under his Management as President of the Creamery Board, things took the "Clear Track Ahead" signal and the Business went through on the Fast Express. When a Letter came in it was Answered and when a letter was Sent an answer came back just as Quickly.

This was a few times Ago, but the Strenuous Life is Still the Happy one and the Attic Works are running as Lively as Ever, and so is the Farmertown Creamery.

Moral.—Running a Farm Business on the Loose Pulley makes a lot of Noise allright, but when the Real Engineer throws on the Belt and Butts in with the Fast Gear, Its time for the Small Boy to climb on the Fence and Get ready to Whoop.—Chicago "Dairy Produce."

AN IMPROVED BREED OF DAIRYMEN.

We hear a great deal about an improved breed of dairy cows. In fact we know of no department of farming in which there is a greater need. The so-called dairy states in the west are largely filled with cows that don't pay more than their board. They yield about 125 to 150 pounds of butter fat a year, some of them not that much, and they will eat that much in value of grain, grass and hay during the year. Therefore they are simply manure factories and should be regarded as such.

And yet these cows are greatly sinned against. The reason they don't produce more is not always because they have not the capacity to do so, but because they are not properly fed or handled.

The Kansas Experiment Station some years ago picked up common cows, some of them hard lookers, sent them to college that is, put them under college care; and while some of them proved to be unprofitable, others of them developed into very profitable milkers. All they needed was an improved dairyman to handle them.

It takes a good deal more to become an improved dairyman than people imagine. There is a great art in the mere mechanical part of milking a cow. There are men that would ruin the best cow in the country in one season, simply because they don't know how to milk and don't seem to be able to learn.

Then again there is a great deal to be learned about giving the cow the proper feed. Judging from the sample rations that are sent in to us from year to year, we would say that nine-tenths of the cows in Mississippi Valley are fed an unbalanced ration. They are expected to give milk when the materials for the milk are not furnished in the proper proportions. Hence the cow does the wise as well as the only possible thing in furnishing milk in proportion to the milk forming materials that are furnished.

She couldn't do anything else if she tried, and she oughtn't to do anything else if she could. Bear in mind that milk isn't all fat or cream, but that it contains a large per cent of casein or cheesy matter, which is albuminous or flesh forming, and she can't furnish milk in excess of that amount. Again, over three-fourths of it is water, and if the cow don't get enough she can't furnish milk; that's all there is of it. Again, many cows fail because they are improperly stabled. When you open the stable door in the morning and the steam comes out like the steam from the kitchen when the hired girl is doing the washing the same day, that barn isn't properly ventilated and the cow can't do her work properly. She don't have enough oxygen and is obliged to breathe over and over again her own breath, and feels just like the hired man does when he sleeps in a small room with the doors and windows all closed. He is stupid and indifferent until he has been in the fresh air long enough to get a supply of oxygen and start the vital forces in motion. So it is with the dairy cow in the close barn.

The remedy for all this is a new breed of dairymen, who will give the matter close study and attention, who will get hold of a few essential ideas. First, that the cow is a machine mainly for the manufacture of milk; that this machine must be fed with raw material adapted to the production of milk, whether that material be in the form of feed, water or fresh air. Furthermore, he must be able to judge from the outward appearance of a cow her value as a milker, approximately at least. He must be able to breed these machines and develop them up to the milking age. That is, he must understand the kind of feed necessary for the dairy calf. If every boy on the farm will give this matter his attention, in the course of the next ten years a new breed of dairymen will be developed that will add at least 50 per cent to the profits of that department of industry as carried on on the ordinary farm.

This new breed of dairymen will understand breeding, feeding, milking and the care of milk, and doing so will be Dairying is a means of grace to some farm boys. They will not become perfect in five years nor in ten years. There is no line of farm business a man can follow money makers and money savers as well, in which he ever becomes absolutely perfect. There is always something to be learned and something attainable which has not been attained.—"Wallace's Farmer."

SECRETARY WILSON'S FARM.

What Is Being Done With an Exceptional Plot Near the Government Capitol.

A Washington correspondent of the "Country Gentleman" reviews recent work of Secretary of Agriculture James Wilson in experimental farming, as follows:

If Secretary Wilson carries out his purpose of turning the Potomac flats of the Lee-Arlington estate just across the river from Washington, and within sight of the capitol, into a model farm, the national capitol will have a unique and special attraction for the agriculturists of the country. These flats, which have not been included in the national cemetery (Arlington) on the ridge just above, formerly constituted the corn lands of the great Curtis-Lee estate, and the portion selected by Secretary Wilson contains about 400 acres, and will be known as the "Arlington Farm."

The first step to reclaim this part of the Arlington estate, which for very many years had been overgrown with weeds and brush, and to convert it in an object lesson, was taken in May, 1901. The property up to that time had been in charge of the war department, and had received practically no care. At the suggestion of Secretary Wilson it was transferred, by an act of congress, to the agricultural department for experimental purposes. L. C. Corbett, the horticulturist of the plant breeding division of the department, was chosen to work out the plans, and, under the direction of the secretary and of Prof. B. T. Galloway, he began the work. He had it plowed up and sown with cow peas, soy beans and coarse fodder, which, when matured, was plowed under again. This year he put in a crop of rye as an experiment, and found that it yielded twenty-five bushels to the acre, which is much better than the average.

The land has been surveyed and plans have been drawn just as an architect would for a house. There will be a model farm house, a model orchard, with the finest American fruit that can be grown, and all sorts of crops, standard and new. There will also be a large collection of shade trees brought together for comparison, and all marked plainly with both their popular and scientific names, so that a farmer, visiting the place and seeing a tree or shrub which he would like to have in his own home, will be able to make a memorandum and order from it intelligently. There will be foliage plants and shrubs also arranged in the most artistic and useful way, furnishing object lessons in their use and adaptability. Already the work of building a model brick barn has begun, and many of the trees have been started.

Mr. Corbett says that they intend to make the orchard the finest and most complete collection of apple, peach and pear trees in the country, and the first object will be to complete the list of American varieties. This farm is particularly well situated for growing all those fruits, in a zone where the flora of the north and the south overlap; apples can be grown which flourish in the northern part of Minnesota or the Dakotas, and at the same time the varieties which do well in the Carolinas and northern Florida grow well. So it will be with peaches, pears, and to some extent, possibly oranges. In making this collection, each tree will be grown under Mr. Corbett's direction on the farm, grafting the stock on a young tree of known character and health. The cutting will be taken from a tree which is in fruit, and which is known to be true to its name. This will insure accuracy of nomenclature. The trees will be very valuable for propagation and in the work of breeding and cross breeding they will be convenient to the experimenters of the department.

The arboretum will be a very practical thing. There are a great many native trees in Washington now; but they are not assembled, as they will be here, for purposes of comparison. The shrubs and perennial grasses will be grown in such places as will beautify the landscape and make them object lessons in what may easily be done on any farm. Mr. Corbett says that they will not go in for the fancy or foreign things, except as they are brought for experimentation. The main object will be to show what can be done by an enterprising farmer with the material at hand.

PLAN A FINE CREAMERY.

Blue Valley Creamery Company's Plant at St. Joseph, Mo., to Cost $30,000—They Buy Farm Separated Cream.

The proposed new creamery to be built at St. Joseph, Mo., by the Blue Valley Creamery Company is reviewed by the "Evening Press" of that city as follows:

The Blue Valley Creamery Company will erect a new plant in St. Joseph at a cost of $30 000. The plans were finally decided upon to-day.

The big creamery's new plant will be constructed of steel, absolutely fire proof, and the finest of modern machinery will be installed.

This enterprising company has outgrown its present quarters on South Eighth street and will build at once on Jule and Main streets, one of the handsomest, most convenient, most modern and largest creameries in the world.

The building will be 50x140 feet and four stories in height. It will be built of brick, stone and steel, with tile floors and in every way a fire proof structure.

CREAM ROOM ON TOP FLOOR.

The ripening and churning room of this plant will be an innovation in view of its being located on the top floor. This room will have a twenty-foot ceiling and be provided with more light and pure air than was ever furnished to the manufacturing room of any creamery in existence.

The receiving room is to be convenient for unloading wagons. It will be located on a railroad switch, where car loads of cream can be unloaded at a minimum expense. The offices, on the first and second floors, will be so arranged as to facilitate the work in each department.

When completed, this manufacturing institution will be equipped entirely with new machinery and appliances in every department, all of which will be the most modern and up-to-date.

The advantage of locating this factory adjoining, and in connection with the Artesian Ice and Cold Storage Plant, lies in securing, at a nominal cost, steam, refrigeration, heat, power and light as well as being convenient to unlimited storage facilities.

While the Blue Valley creamery has been a household word in St. Joseph for the past four years, it has only been a year since the present system was adopted and the work of extending the territory and manufacturing the butter here was commenced.

Officers of the company are: Huston Wyeth, president, head of a prominent hardware and manufacturing company. L. C. Hamilton, treasurer, is manager of pany. J. A. Walker is manager of the creamery company, and C. J. Walker, a the Artesian Ice and Cold Storage Combrother, is superintendent of the buttermaking department. W. W. Marple has charge of the field work, assisted by W. H. Phipps and nearly a score of others who are engaged in soliciting cream and instructing patrons.

"WAREHOUSES OF McMILLAN FUR & WOOL CO., MINNEAPOLIS, MINN.

"The above is an illustration of the five-story and basement brick and two-story and basement frame warehouses of this company, located at 200-212 First Ave., No. Minneapolis, Minn., with a total floor space of over an acre, which is several times as large as any other establishment in this business in the west. This gives them every facility for taking care of the great quantities of furs, sheep pelts, etc., which they handle every year. In addition they have a sheepskin tannery on Hennepin Island, Minneapolis, with a capacity of 3,000 pelts per day. This concern has been building up its business for twenty-five years, and as may be assumed, it has grown to very large proportions. High prices, fair treatment, and quick cash returns explain their success. Their circular is furnished free upon application."

Horticulture

HORTICULTURAL TALK.

VOLUNTEER SHADE TREES.—We consider ourselves very fortunate in having shade and ornamental trees spring up, on and near our lawn, and almost in every instance just where we would like one.

There are also a few old-timers all in very desirable places. The first to mention is the "Monarch" mulberry referred to a few weeks ago in these columns, which stands near the southwest corner of the house and shades the entire house in the afternoon.

This tree is truly a monster, and besides being valuable for its fine shade it bears wagon loads of fruit which is relished by all of us, especially the birds.

It is especially valuable as a shade tree as it holds its leaves so late, at this date being covered with fresh, green leaves.

I am pleased to say that the right to propagate this tree was recently sold to a large nursery company in Missouri. Over 2,000 trees have already been budded to it, and as many or more will be grafted next spring. Thus it will be possible for all interested readers to have a Monarch. Not far from the "Monarch" stands a giant white oak, which we prize very highly.

On the lawn north of the house are a variety, most of which sprang up in the last two years. A wild Black cherry is the largest of these and is valuable for shade. Its long, weeping branches covered with blossoms in spring and afterwards with clusters of fruit, makes the tree very ornamental and besides it gives us great pleasure to see our little, feathered friends enjoy the fruit while filling the air with their melody.

The balance consists of two Elms, a Sassafras, a Laurel-leaf Oak, a Hickory, a Pecan, a small Black Cherry and a seeding Mulberry.

The last-mentioned is being trimmed up high and when it reaches the desired height a graft of the weeping mulberry will be inserted in the top. In this way a tree can be had that is far superior to any that can be bought.

Trees that we planted consist of one each of the following: Weeping Elm, Weeping Mountain Ash, Weeping Mulberry, Catalpa Bungeii, Sycamore, Deciduous Cypress, European Linden, Tulip Tree, Russian Olive, Early Golden Persimmon, Golden Hop Tree and Colorado Blue Spruce.

This leaves room for a Sweet Gum, Cut Leaf Weeping Birch, Florence Crab, Sweet-scented Wild Crab, English Walnut and a Paw-paw, which will be planted next spring.

We also have two immense White Pines and a number of desirable evergreens.

HARDY SHRUBS.—Most country homes could be made much more attractive than they are by having some nice hardy shrubs planted about them. Of these there are a great variety.

All the varieties of Spireas are nice, but Van Houtii is at the head of the list, and should find its way to every home where there is room for one or more shrubs. Hydrangea Paniculata Grandiflora is another that all should have. The Deutzia is nice. Corcorus Japonica is always admired. The Althea is a general favorite. Purple Fringe is very effective in the right location. The Tree Paeony is magnificent while in bloom and attractive throughout the season, owing to its beautiful foliage.

The Flowering Almond is desirable. The Flowering Quince, though common, is not too much so to be admired and the same may be said of the white and purple lilac. Calycanthus is valuable for its sweet, strawberry-scented blossoms. The Weigelia too is worth planting. Hardy Roses should be freely planted. All the Hybrid Perpetuals are nice. Yellow Harrison and Persian Yellow are beautiful in their blooming season. The Ramblers, which represent all the colors of the rose, are all good.

Ruby Queen is a new one of remarkable beauty, and the old Seven Sisters will always please.

CARE OF NUTS FOR PLANTING.—Nuts for planting should go in the ground in the fall before they dry out. If this is not done they will not come up promptly, and in many cases fail entirely.

They should be placed in a small box, can or flower pot, after providing for good drainage. It is well to pack a little moist sand or crushed charcoal in with them, then bury a few inches below the surface on a hillside sloping to the north, in the shade of an evergreen if possible, or on the north side of a building, being careful that no water can stand about them. It is well to place several thicknesses of paper on top of packages containing nuts or seeds, before earth is put on to keep water from seeping in at the top. The object in burying in a cool place is to prevent them sprouting early in the spring before the soil is dry enough to plant.

Another good plan is to place nuts where trees are wanted, putting several nuts in a place and inverting a tin can over them, pressing the can down well into the soil. This will protect the nuts against moles, mice, squirrels, etc. If more than one grows they should be thinned to one. This is really the best way to grow nut trees where only a few and no particular variety is wanted, as it avoids the check which occurs when transplanted. The planting of nut-bearing trees is growing more popular every day, and why not? The nuts are nourishing and healthful, and always relished. True, some are a long time coming into bearing, but when once established are there for ages; and such as prove undesirable for their fruit, will be valuable for timber. In fact, I feel sure that it would pay those who have the land to spare to plant, especially for timber. Take for instance the Black Walnut. It does not take a very large tree to-day to bring a good price at the sawmill. Even trees from four to six inches will bring a very good price, depending of course, on how much heart they have, the sap wood being of little value.

Trees which I planted when a boy are now ready for the mill. Walnut stumps are especially in demand. The scarcity and high price of lumber ought to enable us to realize the importance of planting for timber.

EDWIN H. RIEHL.

North Alton, Ill., Dec. 1, 1902.

ANNUAL MEETING OF THE ILLINOIS STATE HORTICULTURAL SOCIETY.

The forty-seventh annual convention of the Illinois State Horticultural Society will be held in the agricultural building of the University of Illinois, at Champaign, Dec. 17-19, 1902.

Many prominent horticulturists will be present and present and discuss papers of vital interest to horticulturists. Liberal premiums are offered for fruit and vegetables, and the display of spraying appliances and horticultural tools will be an interesting feature of the meeting.

Premiums will be offered for apples grown in Northern, Central and Southern Illinois; also for pears, grapes, quinces, vegetables and special premiums.

Intending exhibitors should notify the Secretary, L. R. Bryant, Princeton, Ill., enclosing $1 annual membership fee. Arrangements for space should be made with Fred R. Crane, Instructor in Farm Mechanics, Urbana, Ill., and shipments made to his care at the Agricultural Building, marked "For Exhibit of Horticultural Society."

THE SPRINGFIELD MEETING.

The Missouri State Horticultural Society has just passed its forty-fifth milestone. The meeting just closed (Dec. 2-4) at Springfield, Mo., contained striking evidence of the lusty strength which has held this society together for the better part of a lifetime—a generation and a half. Missouri is a great fruit state and fruit-growing is but in its infancy, both in character and extent.

It is but natural that in the first apple growing state in the Union, a meeting of Horticulturists held in the heart of the Ozark country should be devoted mainly to the consideration of the apple. The apple is the king of fruits and some of the old guard, Col. Evans, L. A. Goodman and others were heard to remark that the Society had never made so fine a display of apples, as was on exhibition at this meeting.

The attendance was good, delegates from all parts of the state and twenty-nine honorary members from other states being present. There were nearly three hundred in attendance at the day sessions which was swelled to the full capacity of Drury's beautiful Stone chapel by the local interest in the evening sessions. A pleasant feature of the evening sessions was the excellent music and elocutionary numbers which graced the program.

A notable and commendable fact was the re-election by acclamation of the entire corps of officers and this proceeding will doubtless be duplicated next year. Firstly, because of their individual merit and fitness, and secondly, in view of the World's Fair in 1904. In this connection it was deemed advisable to continue in office the men who have official control of the affairs of the Society that the cumulative results of their continued incumbency may redound through their experience to the credit of the Society and the glory of the State.

Mr. F. W. Taylor, chief of horticulture for the St. Louis World's Fair was present and in response to an invitation from the chair, spoke with reference to the Horticultural Department and exhibit at the 1904 exposition. He pointed out the splendid opportunity afforded this State, within whose boundaries the coming greatest world's fair will be held, to make an unprecedented display of her resources and products in fruit growing. He also stated that the available space for the Horticultural exhibit would be double that allowed at Chicago in '93. Mr. Taylor's experience in exposition work combined with his knowledge of the details of the Horticultural profession, will enable him to so arrange the fruit display as to make its educational feature exceptionally valuable and at the same time the whole effect will be spectacular and artistic. The grand picture, which, from the center of the square, four-acre Horticultural building will form a circling panorama, rising in beauty and harmony under the expert touch of Chief Taylor, will make one of the most impressive sights of the Exposition. The tout ensemble—the altogether—will be a work of art—a masterpiece.

One of the most interesting and convincing features on a varied and extensive program was Dr. Hermann Von Schrenk's exposition of the latest discoveries of the family history of the bitter-rot fungus, illustrated by photographic stereopticon views of the bitter-rot bacillus in all the known stages of its development. Dr. Von Schrenk's talk on this apple disease was lucid, exact and at the same time understandable by every person who listened. It was a splendid lesson on a difficult subject and every apple-grower should encourage the work of scientific enthusiasts like Von Schrenk, as the possibilities for good in this direction are boundless. Only last summer was the most important discovery made in the habits of this destructive pest, and that was that the bitter-rot fungus is found in its earlier stages of development on small twigs near the top of the tree, forming the same characteristic sunken spot of decay which is seen later on the fruit. A rigid inspection of trees during the winter and spring months is urged upon every grower and when these infected spots are found cut the branch off a few inches below the rot and burn immediately. If this is done, supplemented with judicious application of fungicides, it is believed that the ravages of this microscopic enemy of the apple will be practically allayed.

An interesting talk by Dr. Homer T. Fuller, President of Drury college, on "Rotation of Fruit Product," was one of the valuable contributions to the program. Dr. Fuller emphasized the need for rotation of fruit crops the same as for grain crops. He stated that after a number of years certain fruits became nonproductive and instead of replanting the ground in fresh orchards or varieties of the same fruit, it is well to change. Nature's law is change, and this same application of natural rotation was pointed out by Dr. Fuller, who said that on hills of New England, where in the natural forest growth during the past hundred years, a series of successive arboreal growth has appeared.

Dr. E. M. Shepard, also of the Drury faculty, read one of the most valuable papers during the meeting. Dr. Shepard's work as Professor of Geology gave to his thesis on "Soils and Subsoils," a scientific value worthy of preservation, and we hope to print this address in a future number of the RURAL WORLD. He told how all soil is but the wreckage of the earth's outer rocky crust, dissolved and disintegrated by time, frost, rains, alternate heat and cold and chemical action. All soils as to their origin the Professor divided into indigenous and transported. The indigenous soils are those found where they were made resting on their parent rocks. The transported are those which have been carried from one part of the country to another either by glacial action and these are called "drift" soils, or that carried down and deposited by the rivers which is known as "alluvial." Soils are also known by their characteristics, such as gravelly, sandy, loam, clay, muck or humus and modifications and combinations of these.

Dr. J. C. Whitten, who occupies the Chair of Horticulture in the Missouri College of Agriculture at Columbia, spoke of the proposed work in his department and again on Thursday evening, at length on the subject, "Horticultural Study in Europe." Prof. Whitten is one of our foremost scientific workers in this special field and his scholarly address was listened to with great interest by the many, anxious to hear of the Professor's recent trip abroad.

A matter which every Horticulturist is interested in from a business as well as sentimental point of view, is the preservation of our birds. The Audubon Society, a purely philanthropic organization, was represented by Mr. August Reese, the Secretary of the Audubon Society of Missouri. Mr. Reese presented a paper setting forth the reason for existence of this bird-protecting society, its plan of work, and what it hopes to accomplish. We want every reader of the RURAL WORLD to uphold the noble work of this society, and when the time is ripe to add his influence in making that work effective. Mr. Reese's address will appear in the next issue of the RURAL WORLD.

It is quite impossible to even allude to all the good things on the program. Those who were there got the full benefit, those who are directly interested may read the full report which Secretary Goodman assures us will appear in the printed proceedings early in January. For the casual reader this brief resume of the meeting is all our space permits, except that prominent papers read at the convention will appear in these pages from time to time.

One of the apple growers' interests which received much serious discussion was the matter of organized, concerted action for the better profit and smoother conduct of the business in disposing of the crop. Something definite may be expected along this line before long, but in the meantime we have a suggestion to make that if adopted by apple or other fruit growers will be profitable. Briefly it is this: First learn the art of packing properly; shake well in filling the barrels, and press little. Fill up the barrels tightly with closely graded fruit and mark your name, the variety and grade on the head. Just as soon (and one season is enough) that your buyer and his retailer learn that you can be depended upon, you can sell on track all your crop at top prices. This is the acme of the "guaranteed package" and all it means is that old-fashioned virtue of honesty. You ought to put up an honest package because it is right. You must do it because it pays.

Buyers are willing to pay 25 cents a barrel more for this kind of fruit, and remember that difficult as it is to deceive once, it is impossible to do it twice; you won't get the chance.

The Junior Editor esteemed it a great privilege and pleasure to meet so many old names and new faces. There is not a cleaner, more intelligent, wide-awake, companionable set of men anywhere in this land than those who make up the membership of the Missouri State Horticultural Society.

THE BEN DAVIS CRISIS.

Editor RURAL WORLD: The publication in your journal a few weeks ago of my letter on the Ben Davis apple has brought to the front a number of defenders of old Ben. Strangely enough the parties coming to the rescue of this declining apple are those having large Ben Davis orchards—many of them planted years ago when this variety had more claims to recognition than it has now, or ever will have again. It is natural for a man to set a high valuation on his property and of course such people frown at any statement that reflects on their judgment or orchards. An apple dealer in Kansas City who is loaded to the guards with Ben Davis makes a hard fight for it in a communication to several trade journals patronized by dealers. The gentleman declares he has letters from many states calling for Ben Davis but he neglected to add that it was useless for them to ask for any other variety and that they were looking for the low figures likely to arise where the Ben Davis were so plenty and all other varieties so exceedingly scarce.

At the late meeting in this city of the National Apple Growers' Association I met a large number of men whose orchards unfortunately were composed largely of Ben Davis. Most of them admitted to me that if they were planting again they would raise more varieties that would be acceptable in every market and worthy of the patronage of all—something that would command good prices regardless of how low Ben Davis figures were. Other growers thought I wanted them to root out all their Ben Davis orchards—an idea I never entertained. A number of these gentlemen submitted what they regarded a knock out argument in "What will you give us instead—what will take its place?" Now there is no necessity for seeking or presenting any one variety but as I stated in my former article several and not one variety should take its place. W. T. Flourney of Marionville, Mo., one of the most successful fruit growers in the state and who owned too many Ben Davis trees to condemn them acknowledged that the article would do much good as it would set the people to thinking and would doubtless change many existing ideas and was especially valuable to those contemplating setting out new orchards. In fact nearly all submitted there was enough already planted and it was time to call a halt on the Ben Davis, because if another tree was not planted in the next twenty years, the Western markets will remain deluged with it during all that time because hundreds—I might say thousands of orchards are composed mainly of young Ben Davis trees.

The veteran editor of the "Fruit Growers' Journal" of Cobden, Ill., in an editorial following my article in his columns hits the Ben Davis much harder than I did and no man can draw on a wider or longer experience among the fruit growers of Illinois. He has been fighting it for years in favor of better apples.

An eminent authority in New York city who stands on ground as impartial as the writer does, writes me in a private letter: "Personally I feel sure that the Ben Davis apple has done more to demoralize and degrade the apple trade in this city than any other one thing. I believe it is possible to work up an enormous trade in all our larger towns and cities for apples of high quality and good flavor." The past several years steadily developed the fact that the public taste and demand is for quality regardless of the higher prices attached to the better quality. The inferior and less desirable products are becoming harder to dispose of in every market. I predict that each coming year will show the Ben Davis more neglected by consumers and a growing desire for finer fruit at good prices.

At the recent apple growers' convention here a great advocate of the Ben Davis said to the writer: "What are good Ben Davis worth in this market to-day?" "$2.00 a barrel." "How much are Winesaps worth?" "$3.00." "Well, sir, at these figures I can make more money raising the Ben Davis." Now at first glance this may look fairly well for the Ben Davis advocate but let us analyze it. Figure out the cost of the two barrels for the Ben Davis the picking and packing of both, the freight to market and drayage on the two and see what a trifle results in the way of net proceeds, and set it up against the net proceeds of the one Winesap and I think you will discover between the lines or figures the route to the poor house. However, let us approach the matter from another side which cannot be avoided—that of cold storage where nearly all must go—here is $1.20 for drayage and storage against 60c or the Winesap. Comparisons in this case may prove odious but they will become much more so when we substitute more desirable varieties than the Winesap as against the Ben Davis for the consideration of apple growers. The railroads, cooper shops and cold storage plants will become the principal beneficiaries of the Ben Davis craze—the fact that the Ben Davis may be worth only half as much as many other varieties is of no concern to these parties. P. M. KIELY.

St. Louis, Dec. 1st.

ORNAMENTAL HORTICULTURE.

[Address before the 45th meeting of Missouri Horticultural Society at Springfield, Dec. 2-4, 1902, by Prof. M. G. Kern, of St. Louis.]

Horticulture in its broadest scope embraces two distinct branches—one of culture, the other—of design and decoration. It cultivates the choicest and most wholesome fruits known to mankind, together with all the culinary vegetables indispensible to healthy human diet, and supplies civilization with a multitude of the choicest flowers and beautiful plants of all zones and climates. It is thus a productive power whose extent and importance cannot be computed by mere numbers. It creates three colossal national industries—Fruit growing, Vegetable culture and Floriculture in all their varied ramifications. Its financial and commercial importance is too well known to need special mention in this connection.

The art of design and decoration on the other hand is less favored by material and remunerative results when weighed in the scale of commercial value. Its mission is one of art. However difficult its pathway may be, its reward is in the ethical domain of the aesthetic culture and civilization of our day. It has to shun the fertile fields inviting the enterprise of the productive branches of horticulture, and seeks its sphere of action in the wealthy centers of population, or around the home of art loving admirers of the beauties of scenic nature, and here it creates the wonderful modern attractions of the cities of to-day, as it did in the past days of civilization's steady onward course. It creates the spacious ornamental pleasure and recreation grounds of the densely populated cities and the suburban districts surrounding the same. And who will count the multitude of homes surrounded by graceful shady groves and verdant flowering lawns met everywhere throughout the land, the evidences and foot prints of a branch of horticulture, but seldom recognized in its intrinsic value, as a medium of ethical progression?

In order to illustrate in a modest way the efforts being made in cities to decorate the waste places around public buildings and public grounds in general, a few samples of recent improvements in the grounds of the water department of the city of St. Louis are herewith respectfully submitted to the members of the State Horticultural Society assembled on this occasion, who may take an interest in the advancement of Ornamental Horticulture in our State. The improvements thus far made embrace the front grounds of stately machinery buildings and of a storage reservoir, together with a romantic forest tract offering magnificent distant views of the Mississippi valley above the city, an ideal location for a future prospect park to relieve the monotony of city life, so keenly felt in all industrial centers. The illustrations here presented of municipal enterprise made in the first years of the century, may perhaps be interesting in future years in a comparison of the achievements of the present day with those of coming years when ornamental horticulture shall be able to rejoice over greater triumphs than are dreamed of to-day.

It is fondly hoped that this modest offering may arouse a renewed interest in the pictorial side of horticulture in the minds and efforts of many of the members assembled to celebrate the 45th anniversary of the founding of this society whose labors have been so abundantly blessed in the past.

A retrospective glance over past decades should surely remind us of the time when educated labor, to which horticulture owes so great a share of gratitude, first found its national recognition in the creation of the chain of Colleges established for the promotion of a few far-seeing Western educators we owe in a great measure the final passage of the Act creating the Agricultural High Schools of our land. The God-given inspiration of educated labor has since been the powerful leaven to penetrate and revolutionize all branches of our system of popular instruction and national education. An age of industry and of production never dreamed of before, and of commerce encircling the world at large, has forcibly wrenched from former exclusive systems of higher education of the classes the concession of equal rights in the education of the masses. The practical has in great measure superceded the classical. The land is dotted with schools of industry and Commerce; the living language of the foremost nations have greater charms than those of ancient Rome and Greece; the colossus of unproductive literature and ancient lore is face to face with a new upstart—Domestic Science—and the cry resounds throughout the land, "Give us the Practical by which we can live and prosper."

In the midst of this commotion some voices are heard demanding the introduction of a judicious system of education in the fundamental principals of the culture of the soil, on which all National prosperity depends, into the public schools, especially into those of the agricultural districts. What will be the outcome of this demand in favor of educated labor? We cannot metamorphose the youth of our land into ready-made farmers, fruit growers or entomologists, but we can train them to become such through a rational course of elementary instruction wisely proportioned and accommodated to the rational range of understanding possible to the juvenile mind. Details of and diversion into special directions at the option of the teacher should strictly be avoided. The fundamental axioms of Nature's economy governing the vegetable world should be the initial step in founding a system of primary agricultural education.

On this basis the various modes of plant culture can be readily understood, and the scope of instruction be correspondingly enlarged and made practical. This might be called the Primer, or First Reader of this new departure in popular education. A Second and subsequent Reader may present to the awakening mind a great variety of economic plants of Agriculture and Horticulture, their specific modes of culture, and uses in the supply of human and animal wants, together with their respective values in the mightiest of all industries, the culture of the soil. The scholar's mind should also be awakened widely as to the intimate relation of the forest to the climate, the indispensable supply of moisture of atmosphere and rainfall of the country and to the compartive need of protection and restoration as far as possible of these fundamental agencies of fertility of soil and prosperity of mankind, items of great importance to intelligent farming and fruit growing districts.

It will be readily understood that such a branch of elementary agricultural training must be instituted by the authority directing the administration of Public Instruction in all its varied branches and that a few text books covering the issue in the most practical way possible must find their way amongst the multitude of school books already in use.

But what of the object lessons, or living representations of much that is taught in the class rooms? Are the school yards, measuring in innumerable instances acres of fertile soil, to continue to lie idle and unused for educational purposes? Must dependence be placed on school books solely, for the presentation of living issues, such as confront us everywhere in Agriculture and Horticulture alike? The school grounds in agricultural districts may be made valuable out-door text books from which the youth can learn by actual observation the names and characteristics of many economic plants indispensable in Agriculture, of fruit bearing trees and shrubs, and of plants of horticultural value in general. In such collections the popular flowers and ornamental plants so welcome in the home grounds of every intelligent family in the community, should in no wise be missing, as they have their special mission to fulfill; specimens of economic plants and of flowers from the garden, the meadow and the forest, might be united into a most instructive collection assorted in accordance with the system of botanical classification of families and representative order of genus and species.

How great an assistance to the study of botany, efforts in this direction, however limited they might be, is best known to the teachers of that branch of natural science. A hearty co-operation on their part with the governing authority of the school might call forth a mighty advance in general knowledge in the domain of botany and kindred sciences. So as not to overlook the claims of Agriculture on the rising generation, the surroundings of the school house might show forth a variety of ornamental trees, and representatives of the forest, an object lesson pointing to a future policy to be adopted in a system of National Forestry not far distant in the present century.

A laudable beginning in the creation of school gardens has already been made in various sections of the States. They are generally based on the plan of manual training, alloting to scholars or even classes a certain area of ground for culture of vegetables and flowers. The interest aroused by these means in working horticulture, has been very gratifying to the promoters of the new departure.

School grounds in the cities would of necessity be directed more in the ornamental than in the strictly agricultural line. They should partake of the cultivated taste prevailing in all urban populations of our day. The stately buildings of education, after locating on prominent squares and ample grounds for ornamentation, should be surrounded by the pleasing features of a public park; an eloquent object lesson to the youth and community of the town.

The ever-advancing aesthetic culture of our day has a special claim on the grounds surrounding the institutions of higher education, the Normal Schools and Colleges of the land. The incongruity of the claim of learning and culture of the inetrior and the aspects of outside surroundings is truly painful to behold in many instances. Academic learning seems often to ignore the existence of cultivated and ornamental grounds gracing a majority of the cities and progressive towns of our land.

To these spacious grounds lying at the very threshold of higher education, the special and prayerful attention of progressive horticulture should be directed. They should be made object lessons and examples of the schools of lower grades in the same ratio as they are the leaders in mental and scientific advancement. A portion of their area might serve directly the needs of practical instruction in Botany, Horticulture and Arboriculture. A moderate effort of the faculty might secure to them a miniature botanical garden, resplendent with the flora of the surrounding country, an open book of the study of nature's endless store of beauty and never ceasing variety of practical instruction.

Well may a passage of Holy Writ, allegorical perhaps in its wordings be commended to the attention of a galaxy of learning and higher education. It is recorded in Genesis 2-8, "And the Lord God planted a Garden eastward in Eden and there he put the man whom he had formed."

The Apiary

SHADING BEE-HIVES.

Mr. W. R. Ansell read the following paper before the Minnesota Beekeepers' convention:

It is with great diffidence that I advance my ideas on shade and ventilation before this experienced gathering. My remarks will be few, will not be dogmatic, but may contain some novel suggestions on the value or inutility, of which I am perfectly open to conviction.

The title of my paper may seem ambiguous, so let me at once assign its limits: "Shading the hive from the sun, and ventilating it in summer and cellar."

When on the subject of shade, I shall confine myself to two propositions: Do we want our bees shaded? and what is the best form of shade?

We do not want them shaded in the early spring nor in the late fall; we do not want them shaded during the early hours of the day, nor at any time when the weather is not very warm. Therefore the natural shade derived from trees or shrubs is not the best form of shade.

I fancy I hear some of my friends, who know the location of my apiary, say, "Sour grapes!" and I know how deliciously cool and comfortable their yards are to work in on a hot day. I do not underrate the value of personal comfort and artistic surroundings in the beeyard, but I think better results can be obtained by placing our bees on an open plain than in the most beautiful Garden of Eden, if there are always to be apple trees there.

I remember one apiary down in a dismally-shaded dell, where my friend considered he had an ideal location, because his swarms (he never clipped his queens) always hung about the trees, until he had leisure to hive them. His bees were late risers, judging by results.

We want our hives to be as warm during a honey-flow as is consistent without distressing the bees, so that the honey may ripen quickly.

For this reason I am of the opinion that a removable shade-board is the best device for us. Of the one I use myself, I present to you a few illustrations, showing its construction and manner of use, and I venture to recommend it to those who desire a cheap and effective article. It is, as you see, made of shingles nailed to a skeleton gabled frame of lath. There is no waste in the use of either material and 100 shade boards will cost you only $4, including a boy's time nailing them up. They are heavy enough to stay on the hive during an ordinary wind, and light enough not to do any damage if blown off in a gale.

They should be tilted toward the sun two or three times a day, and can be placed on the ground if a storm approaches. I can change the position of 100 in five or six minutes.

Ventilation of the hive during the honey-flow and during very hot weather must I think, conduce to the comfort of the bees and ripening of the honey. For this purpose I have found nothing better than the much-practiced plan of placing a small piece of section at each corner under the cover. Perhaps a little thinner might be better, if the bees would not seal up the opening with propolis.

In the case of a newly-hived swarm I have found it advisable to give even more ventilation than this for the first day; but for the second and third days to close the top down tight. Afterwards the hive may be ventilated, as usual, if the bees have started to work in the super.

My concluding suggestion will, I think, be a novel one. Considerable loss may sometimes be experienced, during the winter, through condensation on the under sides of the covers, and consequent dripping on the cluster. Several devices are in vogue to obviate this, among others that of slightly raising the cover so as to allow the moisture to escape before condensation. This plan of ventilation may be all right in the case of a very strong colony, or of one which has a superabundance of stores. But I cannot help thinking the cover should be kept closed in most cases, so as to avoid waste of heat.

Last winter I experimented on twenty-seven colonies in a cellar, by piling them against the wall at an angle of 45 degrees; my idea being that all condensation must of necessity fall down one of the inclined planes, and thus find an exit from the hive, without falling on the combs or cluster, and without the necessity of any top ventilation. Dead bees also fall, etc. I may mention that a couple of two-inch slats of wood traverse the tops of each tier of hives; the hives above resting on these slats. Of course the bottom boards are removed.

Live Stock

FEEDING CATTLE.

The matter of feeding is a broad subject. We have feeding of the dairy herd, the breeding herd, the exhibition herd, the market herd. We will consider the last named. Much of the success depends upon the man. If you like it you will succeed, if not you will have difficulty. Make your cattle gentle. Never needlessly disturb them, for it is while he is lying down that he is making fat out of the corn you have fed him. Remember, when you buy a steer you hire him to haul your corn to market and the less you disturb him the sooner he will get it there.

It has been demonstrated that cattle fatten better in open lots with warm sheds to run to instead of in barns. We use sheds 14 feet deep and 40 feet to 60 feet long, with a three-foot apron projecting forward to keep out snow, all facing south. We feed our hay without hauling from the barn, by having an arrangement by which we open a side of the barn and allow the cattle to eat from the mow on the first floor. We had so much trouble with our lumber tanks that we now build concrete tanks, which will last fifty years. These cost about $36 and are a great saving over the wooden tans, which will cost $15 and last three years.

The next thing is to get the cattle, either by raising them, buying them at home or going on the market. It will pay every farmer to raise a few good calves. Select some breed and then do not change, for if you change often you will go backward. A good plan to get feeders is to buy calves and carry them over, especially if you have grass. If you get feeders on the market it is important that they are bought carefully. You have to buy of the scalpers or go to market yourself. A good motto is "Buy your cattle right and you have them sold." No man can tell you just how to select cattle, but I will tell you how I do. It is easier to tell good cattle from bad when they are fat. First, we must have an idea of what we want the cattle to look like when fat and we must have an idea of the foundation upon which to work. This picture (indicating a chart) is from the ideal picture drawn by Swift & Co.'s artist and shows what the packer wishes a steer to be.

Notice the broad level back, depth in heart and lungs, rump developed well down, well sprung ribs and low flanks, short neck and head. The packer makes an enormous difference in the price of good cattle and bad because he can tell at a glance what he can get out of the cattle. In a 1,200-pound beef, such as this one shown, the packer gets:

Loin,	115 lbs. at	$ .18
Rib,	66 lbs. at	.18
Round,	172 lbs. a	.09
Chuck,	128 lbs. at	.07½
Plate,	115 lbs. at	.06
Flank,	26 lbs. at	.05
Shank,	92 lbs. at	.03½

For such a steer he will pay $97 the day he would have paid but $7 for such a steer as this one (indicating a chart upon which was a poorly bred, poorly shaped and poorly fattened beef). He will pay only $7, the price of a good hide, for this animal, because that is all he can get out of him.

In buying a steer we want one that will get into the shape of this ideal. We want good broad, straight back, a good rump, well sprung ribs. A good quarter goes with a good underline as a rule. We want a good lung and heart, for that denotes constitution. A short, broad head is an indication of an easy feeder. A deep body and short leg denotes early maturity. I never buy a dun steer or a mouse colored steer, as it indicates scrub stock not far back. A black and white steer is a poor steer, as it indicates Holstein blood. A steer with a white face indicates Hereford blood and is a good feeder. A red or a red and white steer is usually a good feeder.

The best time of year to buy must be determined by each for himself. We buy in August. We keep everything off our grass until May and then keep the grass ahead of the cattle. Then in August we have pasture upon which to turn cattle which we buy in Kansas City, where they were thrown by short pastures in Missouri and Kansas. We then turn them into stalk fields, then feed broken corn, then corn ground cob and all, then oil meal and ground feed to finish them about the first of June. In shipping shut away all water and grain about 5 o'clock the day before and give them timothy hay. It is the humane thing to do to send them to market without water, as a fat steer has all he can do when the car is in motion without being troubled with two or three buckets of water and a half bushel of corn inside him. Go to market with them and see them sell, ask your commission men how you can improve next year.

We have one self-feeder, but we question whether it is a good thing. Cattle will do better if they have a regular time to be fed. Keep them fed all they will eat, but do not let them leave any. It is a saving of labor, but has little else to commend it.

The principal thing in feeding is to save expenses. In grinding feed we save one-sixth of it as shown by an experiment. We feed both, ground feed in a self-feeder and broken corn once a day. I think both together better than either one. Of course cattle will digest more of the corn if it is ground for them. In summer feeding we feed broken corn once a day in pasture. We feed bran and oats to give a better appetite. We tried stock food at $250 a ton. We found that cattle that got oil meal did much better than those which got none. The cattle that got the patent food did better than those that got oil meal, but not enough to justify the increased expense.

We finish first of June and avoid the bad spring weather and are ahead of the fly season. We usually strike a pretty fair market in June, but later than that we have found it not so good.

We buy by first of August 700 or 800 pound cattle. We feed outdoors. We feed some shock corn, but it gets the feed lot in bad shape. We use straw bedding in shelter sheds, but do not floor them.—Joseph H. Fulkerson, Jersey City, Illinois, before Jacksonville Farmers' Institute, November, 1902.

GETTING READY FOR WINTER.

In a short time we may expect the coming of winter, and the careful farmer should be getting in readiness for it, writes E. R. Toole in "Agricultural Experiments."

There can be no loss and sometimes much may be gained by having the preparations for winter completed quite early in the season, so that in the event of a hard storm or severe weather, to which all parts of the country are more or less liable, the stock can be suitably accommodated and cared for. Such things are quite liable to happen at this season of the year, and much discomfort and loss are the result if the preparations are incomplete.

A farmer in any part of the country, and especially in the more northern portions, should not undertake to carry through the winter more stock than can be suitably sheltered and accommodated. In the northern states any other course than this should be considered the worst kind of policy to pursue, and even in the warmer and more favored portions of our country, where stock can remain out-of-doors most of the winter with impunity, and shelter for the animals is often considered almost superfluous, there are occasional storms and such severe weather as to result in much loss to stock that is unprotected, often enough to pay the cost of providing suitable quarters for it.

It is now getting the time of year when the stock, especially cows giving milk, will do better if kept in the barn nights or stormy weather. Cows will require good attention in shelter and feed if they are expected to give much of a return in milk.

The farmer, these short days, needs to be up in the morning before it is light enough to find the cows in the fields, and if bedded in the stable over night they can be kept properly clean, while the manure—which should always be an important item—can be conveniently saved, cared for, and applied where wanted.

As for half of the year, more or less, it is necessary to keep the stock in the barn, it is quite important for the farmer to have the stables—as well as all other parts of the barn—arranged so as to be the most convenient for the work of feeding and otherwise caring for all the animals. There can be much labor saved by attention to these things and this means much when hired labor is so difficult to be obtained.

The stables should be made warm, with good floors, large enough for all purposes and well lighted and ventilated. The floors of the stables should be so constructed that they can be kept reasonably dry, and the length on which the cattle stand should be adapted to the size of the animals.

There should be no undue crowding, in order to get so many animals within a certain space, as this will make it difficult and very unpleasant in milking and getting between them.

There should be in every well arranged dairy barn several pens, more or less according to the size of the barn or herd, which will be found of the greatest convenience in keeping animals separate when desirable, or for young calves, lambs, or pigs. Where the farmer is careful in having his barn and stable arrangements properly planned, the work of caring for the stock during the long winter can, as will be seen, be greatly lessened and be made pleasant and agreeable. This is a matter that all should consider as particularly important to themselves and worthy of their most earnest attention.

BREEDING AND FEEDING PRIZE-WINNING STEERS.

The load of two-year-old Angus which we exhibited at the 1901 international stock show were bred and fed by us, writes Hon. L. H. Kerrick in "Orange Judd Farmer." They were strictly two years old—the load averaged about 31 months. We did not weigh them before leaving home, but since they weighed at Chicago after going through the show and sale, 1,631, we think they would have averaged at home about 1,710. They were of enormous width and depth, and the thickest fleshed cattle I ever saw. We knew full well that the public and probably the judges would say of them at sight, they are overdone—too fat. We cannot deny that their outside appearance was most likely to make that impression. It is hard to convince people that steers can be brought to such weights in such a short time, carrying such thick flesh, without having a surplus of fat.

I knew that these steers were not overfat. I knew that what we saw was simply an enormous development of red meat, marbled with fat and overlaid with a reasonable amount of fat. What was in the steers, we put there, and while we could not see it from the outside, having put it there, we knew what it was. There were slaughtered of two-year-old steers exhibited in the exposition, 32 head December 25. Of one of these, only the dressed weight is given. The average percentage of fat of 32 steers fully reported, was 8.83. Elm Park Lad, the first prize carcass, was one of these 32 head. His percentage of fat was 8.77—just a little less than the average of the 32. The percentage of fat on my steers was 4.14, being considerably less than half the average fat of the 32 steers, and less than half yet of the fat of the first prize steer on the block; and yet our steers, as I said before, were pretty generally believed to be overripe and overfat.

The majority of these were sired by Craft of The Wells 23450, a bull bred and reared by us, and used in our herd for the past four years. Their dams were high-grade Angus, bred and raised on our farm. We fed this load according to the methods we have often spoken and written about. The calves were carefully taught to eat some concentrated food before they were weaned, and from that time until they went to the show, they were regularly fed every day. They were dropped in the fields, and grew up in the open, being sheltered only by open sheds, which they could use at will in stress of weather.

For the first year, they were not on what would be called full feed, but they were on full feed the last 12 or 14 months. The principal part of their food was corn, sometimes ground, sometimes soaked, sometimes neither soaked or ground. They always had enough of good, palatable roughage. They had for a good part of the time a small allowance of oil meal, and for the most of their lives some oats, and sometimes we gave them some bran in their ration. We suited the feeds, as well as we knew how, to the production of the largest amount of good, red meat, mingled with fat, and not overlaid with any excessive amount of fat.

The above figures tell how well we succeeded in our efforts. Of course the figures only show that there was no excessive amount of fat, they do not show how the fat was mingled with the lean. I have inspected many cuts from these steers, and am able to say that there was the most perfect mingling of fat and lean that I have ever seen in beef.

THE GREAT BEEF TRUST.

Whether the beef trust shall grow in power or be curtailed by court proceedings now pending are vital questions that will be discussed at the convention of the National Live Stock Association to be held in Kansas City, Mo., January 13, 14, 15 and 16.

It is expected that 3,000 delegates will attend and the Governors of all states where an interest is taken in live stock raising have been invited to be present.

The convention is expected to be most important because of contemplated action on the proposed merger of the packing houses of the country.

The anti-shoddy bill will also come up for discussion.

Many live stock men firmly believe that as soon as the injunction against the big packers is dissolved they will merge into a gigantic trust for the purpose of controlling the beef and meat supply of the country.

If this merger is completed, some of the live stock men fear that the price of live stock, from the producers, as well as as the finished product to the consumers, will be fixed practically by one man, thus placing the entire industry at the mercy of this one-man power.

Other live stock men look upon the merger in a different light. They argue that if the merger is completed, and the directors of the big combine attempt to dictate to the stock raisers, and also to raise the prices on the finished product above the legitimate profits of the business, there will then be room for new packing houses, and that the old days in which every butcher killed his own meat will be repeated.

It is understood among the stockmen that the proposed merger will be discussed at length on every phase of the question.

There are many stockmen who fear a calamity should the merger become a fact, and it is believed that the packers will have representatives at the convention to argue their side of the proposed merger and attempt to show the live stock men that the merger would be a good thing for the stock producers of the country.

COLORADO STEER WON.

One of the most important competitions at all live stock shows is the competition for the best fat steer. At the American Royal Show at Kansas City there was considerable interest over the competition this year, and there were some good steers shown, but George H. Adams won out hands down both in the Hereford class and sweepstakes. The steer with which he won was pronounced by all judges to be the perfection of beef. The steer was a pure bred Hereford, raised by Mr. Adams at his Colorado ranch and fattened at his Kansas ranch near Kansas City. It was not over fattened, but was finished beef. The same steer will be exhibited at the International show at Chicago in December, and will go into the block test there.

HOW SHALL THE FARMER BRING UP HIS SON?

One of the best lectures delivered at the New York Farmers' Institutes last winter was by J. S. Woodward on "What Shall We Do With the Boy?" Mr. Woodward is one of the founders of the New York Farmers' Institutes, and one of the oldest workers on the force. His experience has been so extensive in all branches of agriculture that he is qualified to give good instruction on almost any subject.

Mr. Woodward does not believe in neglecting what may be the best crop on the farm—the boys—so makes them the subject of one of his evening lectures. He said: "We are doing God's work in the world when we are making better men. He wants us to do our part in making the next generation better than the present, and this we can do only by rightly training our children. God has given us our boys to make them better men than we are. First, we want to make our boy grow into a strong man physically; so we must feed him on food rich in bone and muscle-making material, as oatmeal, whole wheat flour and milk. There are hardly two pounds of protein in a who'e barrel full of fine white flour. The oatmeal should be the main food of the growing boy. The child should be taught to develop his lungs to their greatest capacity—to so use the lungs as to keep the blood pure by breathing plenty of oxygen.

"As a foundation of moral character in the man, teach the boy truthfulness. Always keep the confidence of your boys by never deceiving them, and be sure to keep your promises to them. Teach your children that labor is necessary and respectable. Encourage the boy to earn money by giving him a piece of land to work, or animals to care for, and give him one day in the week to work for himself. When he has earned some money, he should start a bank account, thus beginning early to learn business principles. Let the boys spend their own money, then they will appreciate the value of it, and will not squander it. Your boys will make many mistakes, but they will learn to do business. Teach your boy that farming is a respectable business, to respect himself, and dress decently, keep clean, and form good habits. Other classes will respect farmers if they respect themselves. Boys, do not smoke, or drink anything intoxicating. Keep out of bad company. Learn some good business and determine to excel. When the right time comes, get a good wife. Marry the girl who treats her parents well, and you will make no mistake."

MISSOURI IMPROVED LIVE STOCK BREEDERS' ASSOCIATION—ANNUAL MEETING.

The annual meeting of the Missouri Live Stock Breeders' Association in cooperation with the States Board of Agriculture will be held in Springfield, Mo., January 6, 7 and 8, 1903. This meeting will include the Cattle Breeders, Swine Breeders, Horse Breeders, Sheep Breeders, Poultry Breeders and Good Roads' Association. A very able program is being arranged and every farmer and breeder who possibly can should attend this meeting, as it will be the most important meeting held in the state this year. One session will be devoted to the World's Fair, 1904. The State Poultry show will be held in Springfield during the same week, January 6 to 9, and promises to be the largest in the history of the association. For further information address Geo. B. Ellis, Secretary State Board of Agriculture, Columbia, Mo.

Santa Fe officials, says the "Drovers' Telegram," think fewer cattle will be fed along their line this year at the oil mills than last season. One prominent stock agent says the decrease will average fully 33 1-3 per cent all along the line, and at points this will show up even greater. Last year the more important places were feeding from 4,000 to 6,000 cattle, while the heaviest supply being fed at any one town so far this season is 3,000, which number will be handled at Paris, Texas, and also at Oklahoma City. Purcell will turn out about 2,200 cattle from the mills this winter, Weatherford, 2,000 and Ballinger (Texas) in the neighborhood of 2,000. These towns, with the two above mentioned, constitute the sole list of those places which will handle 2,000 steers or upward this year. There is likely, however, to be an increase in corn-fed cattle by small feeders, which may equalize the decrease in cottonseed-fed cattle.

Several carloads of cattle from Mexico attracted much attention at the Chicago yards lately. They were of the "razor-back" kind, all horns and head, yellow and brindle in color, and as wild as deer. A three-year-old would weigh less than a high-grade domestic steer of 15 months. Owing to short pasture last spring, these cattle and hundreds of others were driven over to Grand Valley, O. T., and herded there the past summer.

STOCK NOTES.

THE PASSING OF CORRECTOR 48976.

Arrangements are being made with a celebrated taxidermist for the preservation of the head, crest and brisket of Mr. T. F. B. Sotham's celebrated Hereford sire, Corrector 48976, now overtaken by old age. Until now, small hopes were entertained by the proprietor of Weavergrace of his recovery, but of late "Old Dad" has refused to take the necessary nourishment and he is failing fast. In addition to the wonderful front that has charmed all lovers of fine cattle, the skeleton of this, the greatest sire among beef breeds, will be preserved. Mr. Sotham has given instructions to his veterinarian to chloroform the old bull during his absence. We are advised by Mr. Sotham that he has purchased the celebrated Hereford bull, Shadeland Dean, unquestionably the greatest son of the famous record-breaker, Earl of Shadeland 22d, and out of Delight 2d, by the $20,000 Lord Wilton, Delight 2d being full sister to Mr. Sotham's Aurora Wilton, Mr. Earl's famous Delight, and Mr. Tom Clark's well known Peerless. Shadeland Dean is rated by all those who know him as being the most like Lord Wilton of any living bull, and he is as near to Lord Wilton in blood as it is possible to get, having the additional advantage of the Horace blood through Garfield, and of the Sir Richard 2d blood through Earl of Shadeland. It is Mr. Sotham's intention to breed Shadeland Dean to selected heifers and to retain the Shadeland Dean heifers for at least three years in the herd.

All indications point to a successful sale Dec. 16 and 17, at the National Stock Yards, East St. Louis, where several hundred first-class Herefords will change hands. As we stated in a former issue, this is the annual Southern Sale of the National Hereford Exchange, under the general management of T. F. B. Sotham of Chillicothe, Mo. The auctioneers are Col. R. E. Edmonson, H. W. Graham, D. B. Rogers and J. A. Stewart, who are well qualified to handle the sale. We desire to impress upon the minds of our readers, who may be thinking of buying good registered and high-grade Herefords, that this sale will afford an unusually good opportunity of doing so. The breeders contributing to this sale will give a banquet to their patrons at the National Hotel on Tuesday evening, Dec. 16. After-dinner speakers of note will render the occasion one which will be long remembered by those attending. All who desire further information should send at once for catalogue to T. F. B. Sotham, General Manager, Chillicothe, Mo.

ST. LOUIS NATIONAL STOCK YARDS.

Market Report Furnished by Evans-Snider-Buel Company.

CATTLE—Trade in beef cattle opened fairly active, though competition was not particularly strong; but the movement was reasonably free on the bulk of the early trading; later, trade quieted down and the close was at the weakest point of the day with some calling prices lower. Arrivals of butcher stuff were not large and generally only fair in quality, though there was a fair share of pretty good cows and heifers on which there was a very good market, the bulk of the business being called good and strong. Canners and bulls were quiet and about steady. Calves were a little lower. There was a fair run of stockers and feeders, among which were some pretty decent feeding cattle. There was a small outside demand with prices ruling steady on the good grades and slow on the common.

Receipts of Southern cattle were 53 cars, containing 1,743 head. The big end of the arrivals were cows on which part of the trade dragged for awhile, but sales were finally made on a practically steady basis. Bulls were not materially different, but calves were slow and anywhere from 50c to $1 per head lower on all grades. There was no noticeable change on steers, values being on both steers and cows a little higher than a week ago.

HOGS—The market opened with a good demand from city butchers and order buyers, but packers were not inclined to be in any hurry to do business. Ordinary packers and only fair grade hogs sold slow and were no better than steady. The market was best on the good hogs, 200 to 250 pounds, suitable for the butcher trade. Lights, if good, sold quickly, but the common ones sold rather slow. The close was weak to 5c lower. Fair to best butcher and heavy hogs sold at $6.25@6.60, good medium weights and packers at $6.20@6.35, the bulk at $6.25@6.30; lights, 150 to 190 pounds at $6.10@6.25, the bulk at $6.15@6.20; lights, 100 to 150 pounds, at $5.75@6.10; pigs at $5.50@6.00; roughs and culls a $5.50@6.00. The top of the market was $6.60 and the bulk of the hogs above 150 pounds average sold at $6.20@6.25.

SHEEP—The supply was very small and the market steady. So far this week the sales included lambs that sold at $4@5.90, the bulk at $5@5.25; native and Southwest mutton sheep sold at a range of $3.25@3.75; stockers sold at $1.50@3.00, cull lambs at $2@4 and bucks sold at $2.25@3.00, principally at $2.50.

DATE CLAIMS FOR LIVE STOCK SALES.

Claim dates for public sales will be published in this column free, when such sales are to be advertised in the RURAL WORLD. Otherwise they will be charged at regular rates:

BERKSHIRE SWINE.

Feb. 3.—Biltmore Farm's annual sale of Berkshire brood sows, Biltmore, N. C.

HEREFORDS.

January 26-31, 1903.—T. F. B. Sotham, Herefords, Kansas City, Mo.

January 28-29.—Combination sale of Herefords at Chicago.

January 12-17, 1903.—C. W. Armour and Jas. A. Funkhouser, Herefords, Kansas

January 28-29.—C. A. Jamison and others, Peoria, Ill., at Chicago.

February 10, 11, 12, 1903.—C. A. Stannard and others, Herefords, at Oklahoma City, O. T.

February 24-26, 1903.—C. A. Stannard and others, Herefords, Kansas City, Mo.

May 6-7, 1903—Colin Cameron, Herefords, Kansas City, Mo.

ANGUS.

April 7-8, 1903—W. C. McGavock, Mgr., Aberdeen Angus, Kansas City, Mo.

SHORTHORNS.

December 16.—Gifford Bros., Milford, Kan., at Manhattan, Kan.

February 10-11.—Col. G. M. Casey, Clinton, Mo., and T. J. Wornall & Son, Liberty, Mo., at Kansas City.

February 17.—D. K. Keilerman & Son, Mound City, Kan., at Kansas City.

February 18-9.—I. M. Forbes & Son, at Chicago, Ill.

H. J. Hughes, Secretary.

Horseman

The International Stock Food Co. of Minneapolis, Minn., telegraphs the RURAL WORLD it has just purchased for the sum of sixty thousand dollars Dan Patch, the renowned son of the great performer and sire, Joe Patchen. He will be kept for stud service in the spring and for the exhibitions of his marvelous speed in the fall.

Cleanliness of the horse's tail and mane is to be maintained by daily washing with cold water, followd by brisk rubbing It is unnecessary to mix medicine of any sort in the water so long as the parts are healthy, but at the first signs of trouble the addition of a little baking soda is helpful, and in worse conditions there is nothing better than the daily use of a solution of tar product disinfectant.

Grattan Farm recently shipped a very promising colt to his owner in Missouri. The foal is a large, handsome bay, with unusually fine action at the trot. He was sired by Grattan, 2:13, out of Maude Gentry, 2:27¼, by John R. Gentry, 2:00½, and is engaged in $42,000 worth of futurities, including the "Horse Review" purse No. 8 for $10,000. This colt is owned by Supt. G. V. Buchanan, of Sedalia, and is certainly one of the best bred ones ever owned in that state.

"The American trotter," says "The Horseman," "is the ideal race horse, the ideal road and pleasure horse, the ideal heavy harness and horse show horse and the ideal saddle horse. In fact, the American trotter adapts himself to all uses and makes the ideal in all the different types. No horse has yet been bred which so readily achieves distinction in so many different fields of usefulness and pleasure and there is plenty of encouragement for the breeder to continue his operations and to enlarge them.

A fair circuit was formed November 18 at Macomb, Ill., with the following members and dates: Avon, July 13-17; Camp Point, July 20-24; Mt. Sterling, July 27-31; Griggsville, August 3-7; Bushnell, August 10-14; Macomb, August 17-21; La Harpe, August 24-28; Monmouth, August 31-September 4; Burlington, Iowa, September 7-11. C. M. Simmons of Griggsville is president, and J. H. Johnson of Bushnell circuit secretary. No purse will be less than $300, and the free list is to be suspended. The members are short distances apart and all are prosperous.

A friend writes, says Columbus: "When I first began observing horses owners called a seven-year-old too old for service and sold them to the first shipper coming that way. Those parties would never think of buying or swapping for a thirteen-year-old horse such animals being termed 'worn out' and useless. In view of such a condition, existing not so very many years ago, how emphatic the demonstration given by Prince Alert, who in his thirteen-year-old form paced a mile in 2:00 and a half in 57¾ seconds! Prince Alert has taught everyone that 'age cannot wither or service stale' the usefulness of a well-bred harness horse.

Those who contend that breeding trotters is a lottery probably have never studied the subject of heredity very carefully. The breeder of trotting stock on a small scale, who uses care in the selection of his brood mares and good judgment in selecting stallions best adapted to mate them with, may not draw a prize every time in the shape of a record-breaker, a stake winner or a profitable money-winning campaigner. He can raise animals, however, every one of which, if properly fed and cared for and well broken to harness, will sell when four years old for enough to give him at least a profit over the total cost of the animal, and stands a chance of occasionally getting one that shows either speed enough or the right kind of high action to command a fancy price.

"Prosperity has greatly increased the demand for good horses, and the supply is not equal to it," says "Harper's Weekly." "We are horse poor—not as some people are land poor, because they have too much land—but horse poor, because we haven't enough horses. For years after the panic of 1893 thousands of people who wanted horses could not afford them. But with the return of prosperity the demand for good horses began to grow again, and breeders began to breed them again But it takes at least five years to raise a horse that is ready for the market, and the breeders got behind. The demand has outrun the supply and the price of good horses has increased very rapidly. There are about 13,500,000 horses in our land, of an estimated value of $900,000,000. The improvement of that stock is a pretty important matter, especially in these days, when Europe is horse poor, too, and ready to take from us any surplus supply of good horses that we may come to have."

The care and handling of weanlings is one of the most essential features of successful trotting horse breeding, says the "Western Horseman." A thrifty, well mannered weanling goes far towards insuring a useful and valuable mature animal, and care bestowed on a weanling is always well spent, and if a weanling is worth owning at all it is worth carefully caring for. Without care and good feed weanlings always lose form and flesh just after being taken from the dam, and whatever is lost at this critical period is often troublesome to regain. If properly cared for, a weanling should gain rather than lose at weaning time, and at no other stage in life can a youngster be so cheaply started on its way to a useful education. They should be not only halter-broke, but harness-broke, and be made

to understand that education is not abuse. A little handling and fondling each day will make a well-mannered halter and harness horse of a weanling in a remarkably short time, and no possible harm can come of "stepping" them short distances, either by the side of a saddle pony or in harness, and nothing else adds so much to their value. "Train them up in the way they should go" is as applicable to colts as to children—colts being much less liable to "go astray" after a good bringing up than children.

B. F. Swaggard, of Sweet Springs, Mo., is making a fall stud season of ten mares with his trotting stallion, Baron Dillon, Jr., 2:17¼, says the "Western Horseman." Some very choice mares have been mated with Baron Dillon, Jr., this season. This son of Baron Dillon, 2:12, went lame at Readville, Mass., due to a bad splint, and was shipped home. He is all right at present and will be entered next season through the Grand Circuit. The splint troubled him greatly before reaching Readville, and probably accounts for his reversal of form. He is running in a large paddock, with tips on, and is getting fat, rugged and more substantial. Gold Baron, the other son of Baron Dillon, owned by Mr. Swaggard, is working satisfactorily and will accompany Baron Dillon, Jr., on his 1903 campaigning tour. Alice Hancock, an own sister to Albert Allison, 2:10¼, and a very promising pacer, will also be raced next year by Mr. Swaggard. In addition to the three mentioned is a three-year-old filly by Walnut Boy, 2:11½, out of the dam of Albert Allison, 2:10¼, that is called Jennie V. Sluss. This filly is especially promising and her owner expects to see her the fastest descendant of Walnut Boy. Isis, dam of Albert Allison, 2:10¼, was bred to Woodsprite, sire of Hail Frey, 2:18¼, early in the season, but failed to get with foal. Quit recently she was bred to Baron Dillon, Jr. Isis is fourteen years old, is the dam of nine foals, but looks and drives like a four-year-old. Mr. Swaggard's mare, Fairy Maid, 2:32½, has a fine horse foal by her side that was sired by Surpol, 2:10, and is again with foal to that good grandson of Electioneer 125. The colt by Surpol is a double-gaited fellow, but will go fast at either gait in due time. He is an extra good colt and pleases everyone that has seen him.

BLUE BULL NOTES.

By L. E. Clement.

I dropped into the neighborhood of Coffeyville, Kan., to find that my old friend, Herschel, was there before me. Herschel is one of the very best sons ever sired by Belmont, and for years has stood ahead of any or all sires in Missouri, whose reputation had been made in that state.

At Tyro, twelve miles from Coffeyville, I found John Gaskill, who has been a reader of COLMAN'S RURAL WORLD for twenty years and who claims the letters of "Tramp" way back after the war caused him to go to breeding trotting horses for his own use, and incidentally to pick up a dollar if opportunity ever offered. Mr. Gaskill now has Gen. Barlow 25930, by Altar, son of Egotist, dam by Acbar, son of Bostwick's Almont, Jr., second dam by Tennessee Wilkes, third dam by Enterprise and fourth dam by American Clay. When I got through with this pedigree I could hardly make myself believe I was not at or near Nashville, Tenn. Such a horse will add value to the horse stock of his neighborhood, no matter where he is placed, and Mr. Gaskill ought to take advantage of the low rate offer of COLMAN'S RURAL WORLD to send the paper one year free to every patron of his horse. It would put dollars in his pocket and be a blessing to those that profit by his liberality.

A daughter of Colenso, son of Tennessee Wilkes, out of a daughter of Ally D., by Dr. Herr, is being bred to Gen. Barlow and now has two fillies that, if mine, would be bred in 1903 to Herschel. Who would have greater prospective foals than such a cross would produce?

While at Tyro I saw Mayor Swift, 2:14¼, and his full brother, Jerome Allen, a brainy six-year-old black stallion that is bred to trot and sire trotters. There seems to be a dearth of mares with any breeding, but with several well-bred stallions within a half day's drive, by saving the mares for farm work and breeding, a few years will put them into the standard, and with development will come speed and with speed less and less of uncertainty. No horse on earth reproduces his qualities with more certainty than the American trotting stallion, and from him must come the coach and carriage horse of the future as well as the horse for the speedway and light harness racing.

Broadwell, a standard son of Princeps, that appears in many Kansas pedigrees, died at Joplin, Mo., Dec. 2. He was choked to death by some foreign substance in his food.

Nutgregor, 2:17¾, has made a season of over seventy mares. Nutgregor and Egolite, son of Onward, are looked upon as among the coming sires in Central Missouri.

Dr. J. F. Robinson has sold his stallion Medley, by Princeps, dam by George Wilkes, and has repurchased Bandello, 2:13¾, and placed him at the head of his stud. He is also using Dacosta, by Almont Wilkes, and Silver Walnut, by Walnut Boy. From the young mares on the place by Harry Hodgen, Medley and Walnut Boy he should produce speed of a high order.

Sundown, 2:17¼, by Halwood, son of Wedgewood, is out of a mare by Fortunatus, son of Almont. The blood of Alexander's Abdallah asserts itself in every season's showing, and doubles back on itself as well as any blood we have.

Dr. Houser, D. V. S., of Carthage, Mo., has bought Fanny Ellison, dam of Carlow C., and has bred her to Kankakee. This is a very strongly bred Electioneer-Wilkes mare and bred to a producing son of Mambrino Russell, should produce speed. Her other foals are by Ben McGregor and Victor Ene.

A horse is said to be a good or bad "breaker" as regards his ability to get quickly back to the proper gait.—Farmers' Tribune.

THE ORIGIN OF SPEED IN HORSES.

(From Christmas Horseman.)

(Continued.)

It is now the intention to examine horses for the purpose of determining whether the same laws govern the production of speed, and, if so, to what extent. At the outset it is proper to remember that the thing looked for is the amount to which sires and dams for several generations have exercised their trotting muscles prior to the time they got their foals. As there are no records telling us what this amount is it becomes necessary to resolve the amount of trotting done by horses into its factors and then study these factors.

The amount which a horse has trotted, and consequently the extent to which his muscles have been developed and hardened, will depend upon the amount of trotting he does per day and the length of time he has lived. Other things being equal, an old horse will have trotted more miles than a young horse, and a horse highly trained or used continually as a roadster will have trotted more miles than one not trained or driven to only a limited extent. One of the factors to be looked for is, therefore the ages of sires and dams at the time their foals were dropped, and the other factor is the trotting records that they have obtained as given in the "Trotting Register." The records for both of these factors are reasonably complete, and from them we can obtain a fairly accurate idea of the amount to which the ancestors of different horses have become developed before their foals were produced.

Some horses have been trained severely but only for a short time at an early age or a late age, others have been driven moderately but continuously for many years, while still others have not had their trotting capabilities developed in the least. It is therefore evident that we cannot tell how much a horse has trotted by a mere statement of his age though, when there is nothing known to the contrary, we may fairly assume that a very young horse has not trotted much and that an old horse has trotted a good deal. The fact that a horse has trotted a mile in 2:30 or better may be taken as good evidence that his trotting qualities have been developed by regular training, but the fact that a horse is without a record cannot be taken as conclusive evidence that he is wholly undeveloped. A horse may have been moderately trained, but not raced, or he may have been used for a long time as a roadster without any thought of racing him. In either case he would acquire endurance by a gradual process and, as we shall see later, endurance in one generation is the parent of speed in the next.

From the foregoing it will be evident that the mere fact that the sire of a fast horse was old or young, had a record or had no record, is not of itself evidence of anything, as any one of these things may be true and yet not be contradictory of the law that great speed in one generation is the offspring of great development in previous generations. To read this riddle it is therefore necessary to have recourse to the study and analysis of averages. If, in examining the pedigrees of fast horses, we find that the sires and dams for several generations back have averaged unusually young, then we may know that there is nothing in the theory that acquired development is transmitted because we know that in many cases development is attained only through the lapse of much time, and this fact must have some influence if the theory is to hold. If, on the other hand, we find that the sires and dams of fast horses average much older than the sires and dams of horses less fast, then we may be sure that age added to the sire and dam is a benefit to the foal. If we also find that where age is absent extra training is present, and where training is absent extra age is present, then we may be sure that both age and training in the parent are of advantage to the offspring and that one is, in a masure, a substitute for the other.

BIRTHRANK AND WHAT IT MEANS.

With the foregoing as a preliminary explanation we will proceed with our investigation, which will begin with an examination of the pedigrees of all of the horses in the world which have trotted a mile in 2:40 or less.

There were 134 of these at the end of 1901, but the pedigrees are lacking in two cases, so that the examination is for 132 horses. These consist of 49 stallions, 49 mares and 34 geldings. These are the fastest horses in the world and the conditions upon which speed is produced should appear in their pedigrees.

A diagram like that shown for Cresceus was made for each one of the 132 horses except that in the majority of cases it was carried much farther. In some cases some branches of the pedigrees were extended for more than a century of time. The immediate discussion, however, will be confined to seven sires and seven dams in the pedigree of each horse. As these are not all known certain blanks occur in the pedigree of nearly all horses. The figures in brackets [ ] represent ages of sires and dams. Thus the [23] and [14] adjacent to Cresceus indicates that his sire and his dam were respectively 23 and 14 years old when he was foaled. Likewise the [12] and [11] for Robert McGregor indicate the ages of Major Edsall and Nancy Whitman when Robert McGregor was foaled. In examining the ancestries of men these figures have been called "birthranks," and for convenience the same term may be retained here. When attached to the name of an individual they indicate his inheritance from his parents. When but one figure is attached to a name, and there is nothing to indicate the contrary, it means the age of the sire. When it is desired to indicate both birthranks it may be written either Cresceus [23] [14] or, Cresceus [23-14].

It will be noticed in the diagram that the date of the foaling of Contention is not given, and hence that her birthrank and the maternal birthrank of her daughter are not known. As there are only ten years between Allie West and Mabel, we may estimate these birthranks and know that the possible error is small. The reason for doing this is that we know that there are small birthranks at this point in the pedigree of Cresceus and that if we neglected to record them our averages would not represent the true condition of things. The date that the dam of Major Edsall was foaled is also unknown, and although it is known that her sire was foaled in 1823, no attempt is made to estimate the maternal birthrank of Major Edsall, because there is room for an error of as much as ten years and an error of this amount would seriously affect averages. In all probability this birthrank is not far from [15], and hence its omission has a tendency to diminish rather than increase averages. Where the length of time between grandparent and grandchild is excessive, estimates have been made. Thus, in one case a period of forty-five years is divided into [25] for sire and [20] for dam on the theory that the possible error is less than the error that would occur from omitting these figures.

From the diagram we may find that the average age of the seven sires given in the pedigree of Cresceus is 15.3 years, and that three of these sires had records better than 2:30. The sire of Cresceus was 23 years old, as was one of his great-grandsires. Besides this, one of his grandsires was 22. These are extreme ages and very few horses have three ancestors of such ages so near to him. The trotting records given were taken from Wallace's Year Book, and as only about one in fourteen of the standard stallions there recorded has a record, it will be seen that the progenitors of the fastest horse in the world were more than ordinarily trained. It will also be seen that these extreme ages and these records belong only to the sires, a fact that is corroborative of the theory that acquired speed is transmitted by sex.

In the case of Directum, the second fastest stallion in the world, the average age of the five known sires is 14.8 years, and two of these had records. No dams had records. In this case the sires are very uniform in age, the youngest being 12 and the oldest being 17.

The entire record for fast stallions, as shown in these diagrams, is condensed into the table for stallions. Similar tables were made for mares and geldings which it is deemed unnecessary to give here as the differences can be brought out in a more condensed form.

It will be observed from the footings at the bottom of the table that grandsires average older than sires, and that great-grandsires average older than grandsires. The condensed averages for these are 10.98 for sires, 12.69 for all grandsires, and 13.42 for all great-grandsires. In its details it will be seen that sires of sires are older than sires of dams. This is shown more clearly in the small diagram for the average ages of sires and dams in the pedigree of stallions, and from this it will be seen that the greatest ages are in the great-grandsires in the straight male line.

HORSE RACING AMONG THE BOERS.

Horse racing takes a prominent place in the Boers' catalogue of sport. The prizes run for are of very trifling value, says a London exchange, but a horse that has a reputation for speed always fetches a good price, and this induces many to go in for the sport who would not otherwise do so. The way in which a Boer trains a horse is idyllic in its simplicity. He simply gallops it over the heaviest ground he can find, cuts the supply of water short, and feeds the animal up on oats for a couple of weeks before the race. In these events the jockeys are invariably the Hottentots. These boys adopt the crouching seat which is so popular with the Americans. They have no knowledge of pace, but are adepts at driving a horse to its utmost extent. The racing generally ends up with what is called the wacht en beetge (wait a little) race. In this race the owners of the horses have the mount, but each rides another man's horse. The horse that comes in last wins, and each jockey tries, by beating every animal within his reach, to induce these to reach the winning post before his own mount. It is a horribly cruel performance, but causes a great deal of amusement to the spectators who, as a rule, are not possessed of very tender feelings where animals are concerned.

Spider racing was at one time a popular form of amusement. The spider, as is, of course, well known, is a light cart, somewhat after the style of our gig. In these matches the distance might be anything from five to fifteen miles. The authorities, however, have for some time looked coldly on this form of sport, and it has gradually died out, except in the more remote country districts, where it is still to be met with.

SUGAR AS HORSE FOOD.

An odd discovery about horse feeding has been made in Argentina in the recent campaign of the Government against the revolutionists. So many horses fell ill in consequence of the bad roads and heavy transportation that the veterinarians didn't know what to do about it.

To supply food which would give greater endurance one of them made the experiment of adding a little sugar to the horse rations. It has been so successful that two ounces of sugar daily are given to every horse.

The horses last longer and do more work, and some which had become useless have even gained strength and capacity for work.

ROD AND GUN

HUNTING IN S. E. MISSOURI—NO. 5.

Monday, Nov. 17th, was a day of misfortunes. Deer were started both in the forenoon and afternoon, and long and exciting runs were made, but in both instances the deer escaped unharmed. Tuesday morning an early start was taken, as two days of hunting without success had passed, and it was deemed important to have fresh venison in camp. In a short time three deer were jumped in a bunch, and the chase began. About half the dogs followed one deer, and the other half followed another. The one that ran south went dangerously near the stands of Hale Talbot and Capt. Eller, but not near enough for them to shoot. It crossed the river and escaped. The other ran north, making a very lengthy run, but finally came within range of Frank Eller's gun and fell a prey to his marksmanship. The distance he shot was over 70 yards. He put one of the shot through the deer's heart. How to get it to camp was now the question. Cook Groves soon came up from an adjoining stand and the deer was disemboweled, to make it as light as possible, the legs were tied together, a pole was put between them, and then taken upon the shoulders of the two hunters, and the tedious march to camp began. The team had been sent to town for the mail and supplies—hence the dilemma in which they were placed. It is needless to say when they arrived at camp they were tired and hungry and were received with cheers by the other members of the club, and all heartily congratulated Frank on his second triumph. In the afternoon another chase was indulged in, but the buck ran outside of the crossings, and straightaway to the west, a long distance. Two of the dogs that followed him failed to return to camp and, on this, Wednesday morning, are still absent. The absence of these, with one that has a sprained ankle, has reduced our running force considerably.

An early breakfast as usual on Wednesday, the men all starting for their stands, the drivers saddle and mount their steeds and start for the drive. After cold trailing a large buck, judged by his tracks, awhile, they jumped a fawn, and the chase began. After making quite a circuit it came too near the guns of the drivers, Howlett and Riggs both shooting at it, and it became their prey. Riggs brought it to camp, took back the dogs that had been left in camp and started off to trail the buck that the dogs had first followed. It was what is called a cold trail, the buck having made his tracks several hours previously. Before reaching the trail they started another deer, and the dogs that had started out early in the morning had also jumped one, running near a crossing occupied by Brent. To obtain a better view he had climbed up on a leaning hickory tree where he was sitting. As the deer passed him at a considerable distance, though within gun shot range, he opened fire on him with his Winchester rifle, firing seven shots in quick succession, but the deer went on about his business. Mr. Brent has the reputation of being a first-class marksman, but reputation counts but little against actual facts. It is deeds the club wants. It is almost needless to say that the case of the Club vs. Brent has been duly docketed. His excuse is that he was sitting in a cramped position and could not handle his gun as he could have done if he had been on his feet. The cane was also thick and almost hid the deer. He said he kept blazing away at it the best he could as long as he could see it. Neither of these deer was secured, and the hunters returned to camp hungry and tired. There has been so much running, the dogs are about worn out. They are footsore also, and run only about half as fast as when first brought to the hunt. It was agreed there should be no chase in the afternoon and men and dogs would take a rest. One deer had been taken and that was all that was needed. Late in the afternoon the little steamboat Bernice landed at our camping grounds and laid up for the night. Learning that there were several good musicians aboard all were invited to attend a grand concert in our tents at night. By uniting the musical forces of the boat and the club a band of first-class performers was obtained, and violin, banjo and vocal music was given that would almost put to shame some of the musical bands that are starring the country towns. It was an occasion that will long be remembered by all that were fortunate enough to attend. The officers and men of the boat were all invited to take breakfast with the club and they did full justice to the venison steak and other good things provided for them.

Thursday morning's chase ended in a failure, but the afternoon run was the most exciting that has yet occurred. There is a very large buck, the monarch of these parts, known as the Priest buck, so-called because he has been living around the Priest farm for ten years or more. It has been the ambition of all hunters that come to these parts to capture him on account of his great size and immense horns. He has been hunted and shot at frequently, but seems to know all the curves of the game and how to escape. Three of our best dogs were taken to his location and they jumped him soon after 1 p. m. He ran dangerously near one of the standards, but then, after running awhile, crossed the river and ran out of hearing. The dogs followed him in hot pursuit. He made a circuit of many miles, the dogs never halting and getting nearer and nearer to him. Thus the race was kept up until dark, when he was forced to take to the river. Howlett heard him plunge in the river not far from camp. He could see the waves he made and judged where his head was and fired both barrels at him. The men in camp and all the dogs were turned loose. The buck came within 150 yards of the camp, the dogs sometimes baying him and sometimes running him. A fox terrier in camp caught him by one of the hind legs and hung to him till he was kicked off. It was too dark to take aim and there were too many hunters and dogs around to shoot at random. He ran about a mile, getting into old river, men and dogs following. Had there been moonlight his fate would have been sealed. As it was, he had been wounded as blood was found along his tracks in the morning. He had had such a protracted race that it was thought he would lay on the island adjoining which he had taken refuge over night, and that he could be easily captured in the morning. Accordingly on Friday morning the river passes were filled and the dogs and drivers started for his supposed rendezvous, but they soon started two other deer, part of the dogs following one and part the other, and the Priest deer was not reached. The deer that ran south soon took to the river and was shot by Foster. He had to fire three shots to kill him. All the deer we have killed in the river it has taken three shots to secure. Nothing but their heads being exposed, the mark is a small one. Capt. Wm. Eller came near getting a shot at the one that ran north, but it turned and made a long run. Burwell and Riggs following him till near noon, when they returned to camp. The deer that ran south and was killed proved to be a three-pronged buck, large and in fine condition. An effort was made in the afternoon to start the Priest buck, but before reaching his supposed retreat another deer was jumped, which led the dogs off on a long chase. They did not return until after dark. As the writer, who is the historian of the party, leaves to-morrow for his home, and to arrange for teams to take hunters and camp equipage to the railroad station, these hastily written notes must be brought to a close. In all ten deer have been killed before our dogs and the hunt has been in every way successful. The weather has been delightful except a little too warm, spoiling some of our venison. We have given several deer to others who were not so successful. The utmost harmony has prevailed—not a single unkind word has been spoken, though good-natured chaffing has been carried on to a high degree. All the members of the club say they will be promptly on hand, if alive, for a similar outing in 1903. OBSERVER.

Home Circle

Written for the RURAL WORLD.
CONSTANCY.

When first I kissed that lovely face,
It seemed that nature and her race
Of fairy artists vied their skill
To make the fairest, and to fill
That single mould with all the good
That makes the charm of maidenhood.

Again I kiss that face today—
Some forty years have passed away;
The brows are knit, the locks are gray,
And o'er the face the wrinkles stray—
The heart has lost its childish play,
The bloom of youth forever gone,
But still, unchanged, my love lives on.
—Howard L. Terry.

S. W. Mo.

Written for the RURAL WORLD.
MISSOURI WRITERS.

Our "Saturday Afternoon Club" is proving to be interesting and helpful, and I will gladly give our plan of conducting it, as Miss Annie Hoffarth requested.

We meet the second and fourth Saturdays of each month. At the last meeting the girls expressed the wish to have the club meet every week. But they are school girls, and this literary work should not supplant the systematic training that comes from regular school-room work. The fact must ever be remembered that school work is not simply gathering facts—a parrot can be taught to recite—but it is to train the faculties so that each day of life we will learn without teacher or text book. When this is done, then, and then only, is one educated.

After reading the minutes of the previous meeting, the members discuss for fifteen minutes current topics. This keeps the girls alert and posted on the great events of the day. We have several good musicians, so an instrumental selection is rendered, often a classical composition. Then we have a sketch of the author whose books we are to consider. Then, selections from the author read, or a paper read on the leading characters in his works, and the benefits to be gained from studying these characters are discussed. We also have vocal music, solos, duets, as the material is available.

One may think that there is not sufficient talent for such work in her community. Don't come to such conclusions until you have made effort to awaken the latent talent in your young people. No girl in our club is over eighteen, and the majority much younger.

If papers are watched, and magazines closely scanned, you will be surprised how much material that is strictly up-to-date can be found to get matter from in preparing biographies.

Perhaps the Home Circle readers would be pleased to have these sketches as prepared by the girls. The following on "Missouri Writers" was prepared by Miss Ethlyn Allen:

Although we know that Missouri is coming to the front rank in many things, yet few of us realize that the literature of this state has reached the high standard which it has. It is generally thought that Missourians have not had the advantages of education and culture that the eastern people have enjoyed. Still we can boast of nearly four hundred writers, some of whom have gained world-wide fame. Most of these writers have written prose but some have written poetry.

Mr. James Winston Churchill has written "Richard Carvel," a story of the early colonies, which is very good, and also "The Crisis," a story of the Civil war period, the scene of the story being laid in St. Louis. This book is considered one of the greatest that has been written lately and has had immense sales. He is at work now on another book which will no doubt be of the same high standard as his others.

John Newton Baskett of Mexico, Mo., who was a schoolmate of Eugene Field's at Columbia, has written "Bird Life," and "At You-All's House." This last is a very interesting book of Missouri life; the author showing that he has been a keen observer of nature, and truly understands all about the different birds as well as human nature. The heroine of the story is a true Missouri girl, and I think all would enjoy reading this book.

Nearly every one has read some of the works of Mark Twain, the Missouri humorist. He was born at Hannibal, and many of his stories are of the life lived there years ago, when that city was a prominent river-trading station. Most of his characters are drawn from real life, and some of them are of his own boyhood experiences. It was his boyish ambition to be a river pilot and he was one for a time, and when he visited St. Louis this year with a party of friends he had the honor of piloting the boat down the river. Some of the books he has written are: "Innocents Abroad," "Roughing It," "Life on the Mississippi," "Stolen White Elephant," "A Tramp Abroad," "Prince and Pauper," "Huckleberry Fin," "Tom Sawyer," "Connecticut Yankee at King Arthur's Court," and several others.

He enjoys a joke on himself as much as on any one else. While at a dinner in London he remarked that the Englishmen did not spell their words according to sound, and one of them quickly replied: "In America people spell a man's name C-l-e-m-e-n-s and call it Twain." Although Mr. Clemens has traveled extensively, still he thinks no place as lovely as the picturesque haunts of his boyhood days around Hannibal.

Mrs. Dugan of Sedalia, known better as "May Myrtle," is quite a literary woman. She has written "Myrtle Leaves," "Muriel," and "Love's Sacrifice."

Thomas Hart Benton has written "Thirty Years in the United States Senate," and "History and Legal Exposition of the Dred-Scott Decision."

Jessie Benton Fremont has written "Life of Thomas Hart Benton," "Story of the Guard," and "Souvenirs of My Times." She was the wife of the great explorer, Fremont.

Professor Greenwood, Principal of Kansas City schools, who is at the head of one of the best schools in the West, has written "Principles of Education Practically Applied" and also a "Historical Sketch of Missouri as a supplement to Butler's Geography.

One of the most loved of Missouri writers is Eugene Field. He was born in St. Louis, Mo., September 2, 1850. His parents were Vermont people. His father was a lawyer and his mother a gentlewoman of beautiful character. When he was six years old his mother died and he was sent East to be educated. Eugene Field, as a child, was most precocious. When nine years old he was sent to Fayetteville, Vermont, to the old homestead where his grandmother lived. This visit extended over a period of seven months. Of this visit Field said: "We, my brothers and I, stayed there seven months and the old lady got all the grandson she wanted. She did not want the visit repeated." His grandmother was a New England Congregationalist of the strictest sort. She used to encourage Eugene to write little sermons, paying him ten cents for each one he wrote. The first one of these sermons was kept by Field to the end of his life. It was composed of several sheets of note paper, beautifully bound in cloth. He was twelve years old when his father died, and he was sent to St. Louis where he was placed under the guardianship of Melvin Gray, a friend of his father. Although Field has achieved such great success he was never a student. He attended Knox College, Illinois, and also Columbia, Mo., but he preferred fun to work. He married Miss Julia Comstock, a St. Joseph young lady, and as he had at this time spent most of his income, he had to settle down to work. He tried different things and for a long time he was a reporter for the Chicago "Tribune," his column of "Sharps and Flats" being widely read. He was pre-eminently the children's poet and always enjoyed the companionship of children. "Little Boy Blue" and "Little Tin Soldier" are probably the most widely known of his writings.

There are works on recent authors which one can procure at small cost. I will give the titles of these if any member writes to me asking for them. Our farmers are prosperous, and will provide such books, if the fact is made evident that the girls are stronger mentally by using them, and are made more graceful in manner by the social contact which such club work develops.

MRS. LEVI CHUBBUCK.
Caldwell Co., Mo.

Written for the RURAL WORLD.
WHAT WE LIKE BEST.

The above caption opens a wide scope of thought and covers a multitude of ideas. In considering the subject from an individual view, many diversified opinions would be presented, according to surrounding influences and many of the "likes" would be as widely apart as are the Antipodes.

As to our "likes" we scarcely know on what to venture first. As an introductory: We like a quiet surrounding, to peruse the literature that comes to us, to meditate on what we read, oftimes entering dreamland in contemplating the numerous features of interest and profit portrayed. The RURAL WORLD forms a large factor in this pleasurable pastime. We thoroughly enjoy the excellent articles from the able contributors that embellish its pages, and the spirit of kindness that permeates the whole is the crowning glory of all.

Another of our "likes" is system. In every duty, in every vocation, in every pursuit system should be the predominating feature. The unsympathetic manner in which much of the work of life is done speaks volumes for its inefficiency. So little system and so great a preponderance of carelessness destroys to a large degree the fruitage of usefulness that might with systematic effort produce a far greater benefit.

Another of the ingredients of our liking is true friendship—a friendship strong in faith and cemented by a love that reaches beyond the conventionalism of social life—a bond of unity that brings two souls together as one in accord, in sincerity and in deed, and when that friendship is stimulated by a christian love, a love born through an inheritance of our Savior's Kingdom on earth, then is friendship purified into a glorious reality.

In the category of our "likes" is that of an harmonious community, one in which all labor together for the best interests of the people, where selfishness and personal ambition are lost in the desire for the good of others and all emulate Christianity and enterprise in every avenue of social and industrial life, to the end that peace and prosperity may be the ruling feature, and all things move on for the betterment of mankind. DYPE.

FRUIT AS DIET.

If the people ate more fruit, they would take less medicine and have better health. There is an old saying that fruit is gold in the morning and lead at night. As a matter of fact it may be gold at both times but it should be eaten on an empty stomach and not as a dessert, when the appetite is satisfied and digestion is already sufficiently taxed. Fruit taken in the morning before the fast of the night has been broken is very refreshing, and it serves as a stimulus to the digestive organs. A ripe apple or an orange may be taken at this time with good effect. Fruit, to be really valuable as an article of diet, should be ripe, sound, and in every way of good quality, and, if possible, it should be eaten raw. Instead of eating a plate of ham or eggs and bacon for breakfast, most people would do far better if they took some grapes, pears, or apples—fresh fruit, as long as it is to be had and after that they can fall back on stetwed prunes, figs, etc. If only fruit of some sort formed an important item in their breakfast, women would generally feel brighter and stronger, and would have far better complexions than is the rule at present.—"Women's Medical Journal."

The welfare of the farmer and his family is always considered in "The Youth's Companion's" plans and a notable feature of the volume of 1903 will be a group of articles by eminent authorities on agricultural matters. While of particular value to those who live in farming communities, these articles will not be overspecialized, but will be attractive to all classes of readers. Among the contributors in this department will be the Hon. James Wilson, Secretary of Agriculture; Dr. L. O. Howard, Chief Entomologist of the United States; Surgeon-General Sternberg; Prof. L. H. Bailey of Cornell University, and the Hon. W. R. Merriam, Director of the Census.

An Easy Way to Make Money.

I have made $560.00 in 30 days selling Dishwashers. I did my housework at the same time. I don't canvas. People come or send for the Dish-washers. I handle the Mound City Dish-washer. It is the best on the market. It is lovely to sell. It washes and dries the dishes perfectly in two minutes. Every lady who sees it wants one. I will devote all my future time to the business and expect to clear $4,000.00 this year. Any intelligent person can do as well as I have done. Write for particulars to the Mound City Dish-Washer Co., St. Louis, Mo. MRS. W. B.

MAMMY DINAH RECIPES.
SOUPS.

Stock is the juice of meat extracted by long and gentle simmering.

A piece from the neck of beef, a shank or a chicken will do for the stock, which is the basis for all soups.

Put it on in cold water, with salt and pepper, allowing a quart of water to a pound of beef.

Let it come to a boil, skimming it frequently. Boil slowly several hours. Add a little boiling water from time to time, so as to keep about the same quantity in the pot. Strain.

It is now ready for any soup and will keep for several days.

OKRA SOUP.

Take a shank bone, or about three pounds of beef; boil in three quarts of water until tender, skimming often.

Cut up in small pieces and return to the pot.

Add one quart of chopped okra, one pint chopped tomatoes, one onion cut fine; pepper and salt to taste. Boil slowly three hours.

Three ears of grated corn will improve it.

VELVET SOUP.

One large, fat chicken, three pints chicken stock, one small onion cut up; one head celery cut up; one clove and as much grated nutmeg as will fit on the point of a penknife.

Cover the chicken with three pints of cold water and cook slowly in a covered vessel.

Add the above ingredients.

GRAVY SOUP.

One good-sized beefsteak, one large onion, two tablespoonfuls browned flour, one can tomatoes, chopped fine; three turnips, chopped fine; two carrots, chopped fine; four hard boiled eggs, chopped fine; one small teaspoonful ground cloves, two small teaspoonfuls salt, one small teaspoonful mace.

Boil the steak, then chop it fine; chop the onion with the flour; add to the steak and fry brown with a lump of butter the size of an egg, stirring all the time.

Put in the soup pot and pour over it about a teakettle of boiling water and add the tomatoes.

Before serving add the eggs and spice.

Pour in your soup tureen a half tumbler of claret and a lemon cut in small pieces.

If you like, a little chopped parsley and thyme may be put in.

CHICKEN CREAM SOUP.

One head of celery, one pint of boiling water, two cups of milk, one sliced onion, one tablespoonful of flour, one tablespoonful of butter, one teaspoonful of salt, and a pinch of pepper.

Cut the celery in small pieces and boil it half an hour with the onion.

Boil the milk, thicken with butter and flour, and salt and pepper; then pour all together. Before serving add a cup of whipped cream.

CHICKEN GUMBO.

Fry a young chicken brown. Pour boiling water over four large tomatoes and peel them. Boil one pint of okra for fifteen minutes.

If corn is in season, boil four ears with okra, cutting the kernels from the cob.

Put the chicken in a porcelain-lined soup pot; add tomatoes, okra, corn, one pod red pepper, and make thickened gravy.

Pour this over all and add two large cups of boiling water; add a litle salt. Boil for one hour slowly and serve after removing the chicken bones; celery and onion are tender; strain and add one quart of cream, one pint of fine white bread crumbs, one large cupful of chicken breast, finely chopped, and one cup blanched almonds, finely powdered.

Put on the hottest part of the range and let boil, stirring frequently.

Serve at once.

VEGETABLE SOUP.

About four hours before the soup is wanted take a quart of stock and add to it one carrot, chopped fine; one white turnip, one onion, one bayleaf, one can tomatoes, chopped; season with salt and pepper and half a pod of red pepper; simmer four hours.

WHITE SAUCE FOR FISH.

Rub a tablespoonful of butter smooth in one tablespoonful of flour. Melt this in a teacupful of hot milk.

Beat up the yolk of an egg with a teaspoonful of cream. Stir into the milk and heat to boiling point.

Add a tablespoonful of choppeil parsley as you take from the fire.

This is nice also for boiled chicken.

TO STEW RED FISH.

Scale the fish, wash well and dry. Put it in a pan and half fry it; then chop it fine. Add one teaspoonful mace, one teaspoonful allspice, one-fourth teaspoonful cloves, one onion and a handful of parsley. Chop them fine.

Rub one large spoonful of butter and three of flour together.

Add a little warm water to thin it.

Take a teacup of milk and enough water to make a gravy.

Place the fish on a strainer and then in the stewing kettle, and pour over it the ingredients, mixed together.

Stew for one-half hour.

EGG SAUCE FOR FISH.

Melt three tablespoonfuls of butter and stir into it the yolks of four eggs, boiled hard and mashed smooth, a pinch of cayenne pepper and salt, and the juice of half a lemon.

TO BARBECUE SQUIRREL.

Put slices of fat bacon in a pan, clean the squirrels, lay them in the pan and cover them with thin slices of bacon.

Put in the oven and cook until done. Take out the squirrel and keep it hot.

Then remove the bits of bacon, sprinkle in flour to thicken the gravy and let it brown.

Add a teacupful of boiling water, a tablespoonfuls of butter, the juice of a lemon and ten teaspoonfuls of good catsup.

Pour over the squirrel and serve.

A little Worcestershire sauce improves this gravy.

It takes from an hour to an hour and a half to bake the squirrel.

FRIED CHICKEN.

Cut up a pair of young chickens and lay them in a pan of cold water to extract the blood.

Wipe dry; season, dredge with flour and fry in butter.

Have the butter hot when the chicken is put in; cover the skillet and set it back on the range to cook slowly. When both sides are a rich brown take out and keep hot.

Put in about a teaspoonful of flour, stir it in the grease in the pan; then add half a cup of boiling water and a cup of milk.

Season with pepper and salt, and let it boil.

Have some chopped parsley in the sauceboat; pour the gravy over the parsley, stir and serve with the chicken.

SOUTHERN PIE CRUST.

Four cups of flour to one cup of lard, one-half teaspoonful of salt, one-half teaspoonful of baking powder.

Mix thoroughly, then make a soft dough with ice-cold water.

Roll out once.

This makes a rich, flaky pie crust.—Republic.

WOMEN AND FORESTRY.

Clubwomen are working in many states for forest preservation. They have taken an active part in the agitation in Pennsylvania, which has resulted in the preservation of 700,000 acres of forest lands, placing that state at the head of all in this matter. The Woman's Club at Wilkesbarre has been especially interested, securing the appointment of a forester to care for forests in the vicinity.

The Maine federation has a committee on forest preservation. Maryland and Delaware are trying to save their evergreens, of which the states are being denuded at Christmas time. New Jersey wants to raise a fund of $100,000 for forestry parks along the palisades. Clubwomen of Wisconsin have planted hundreds of trees during the last few years. Minnesota women, says the Detroit "Free Press," have labored unceasingly to secure a permanent forest reservation at the headwaters of the Mississippi.

A LOVER'S SONG.

I am happy! Yes, I am
As a high tide clam,
For I see her every day,
And I think I hear her say:
"I'll be thine."

MARION.

Poultry

CHAT.

I am sometimes asked by beginners which breed of poultry is the most desirable, and about all the answer I have been able to give them was "any one of them." I believe each breed has its admirable points. It does not seem possible to condense all of the best in any one breed.

The poultry raiser must sit down and carefully consider what he wants, what market he expects to cater to, and then select the best breed for that market, or possibly for his surroundings. If one wants eggs, to my notion the White Leghorns come first, the Spangled Hamburgs and Houdons a close second, with Brown Leghorns and Black Spanish. This for eggs alone.

If he wants heavy meat fowls, I think the Light Brahmas a little ahead of all others. This breed has many admirable qualities; they are very heavy when mature, but mature rather slowly. They are quiet, do not range or steal nests, and while not at all non-sitters yet are extremely easy to break up. If taken off the nest when first inclined to sit, fed and watered and allowed to roam on good grass, that usually settles the question, and they go to laying again in a short time.

The blacks are more persistent sitters, Langshangs pre-eminently. The Hamburgs and Houdans lay a pure white egg that is very attractive in appearance. Both are non-sitters, but they differ to the extremes in the line of wildness and tameness. A Hamburg will plot all night to find some place to lay her eggs where they will never be found. They will find a home and steal a nest in a neighbor's woodshed. They never tame, but are as handsome if not the handsomest hen known. This particularly of the Silver Spangled Hamburg. But they are rather light bodied, and have blue black legs, so they they do not make an attractive market fowl. On the other hand, the Houdans, while light-bodied and dark-legged, are the greatest pets in the world. They do not have to be tamed, they are hatched tame. They will lay in any little cubby you suggest; you can make a nest for them anywhere and never mind to hunt for stolen nests.

Of all the fowls I ever knew or saw—and I think I know them all—the little five-toed "tossle-topped" Houdans are the most friendly and winning. Cold fall rains are bad for them, as it soaks their top-knots, and for that reason I keep them in their covered quarters and find them there on cold, rainy days. Otherwise they sometimes take cold. Hamburgs have rose combs, and so do not suffer from our cold winters. Brahams also are well fitted for northern winters; Black Spanish and single-comb Leghorns should never be raised in the north. It is not worth while when there are so many other kinds to select from. A rose-comb Leghorn is all right for cold climates.

Now the Rocks are a very popular breed. I think they deserve all the good that is said of them, except I think they are not pretty. They seem to be a sort of half-finished job in a chicken—they lack grace or finish. Still when fricasseed I suppose it does not matter whether the tail feathers were uncouth or not. Some consider the Wyandotte the best hen on earth, and certainly it has plenty of praiseworthy qualities. They are of good size, mature as does the Rock, fairly early, have nice skin and yellow legs. If I wanted to raise eggs exclusively I should keep the rose-comb White Leghorn, remembering that they must have more range and scratching opportunities than the quiet Asiatics.

If I wanted broilers I think I would confine myself to White Wyandottes. But if I wanted eggs for home use and pets, give me Houdans every time.

KIT CLOVER.

THE CHRISTMAS DINNER.

In spite of the fact that the word dyspepsia means literally bad cook, it will not be fair for many to lay the blame on the cook if they begin the Christmas Dinner with little appetite and end it with distress or nausea. It may not be fair for any to do that—let us hope so for the sake of the cook! The disease dyspepsia indicates a bad stomach, that is a weak stomach, rather than a bad cook, and for a weak stomach there is nothing else equal to Hood's Sarsaparilla. It gives the stomach vigor and tone, cures dyspepsia, creates appetite, and makes eating the pleasure it should be.

The labor and trouble expended in providing a place in which the hens must scratch for their whole grain is well repaid. To give the best results the hens should be made to exercise.

The Pig Pen

SILAGE FOR PIGS.

Editor RURAL WORLD: Just imagine yourself at Cedar Hill Jersey Farm Piggery for a short time and see what you would see. You would find the Swine Department Manager had his matrons for next years pig crop sorted out and in comfortable quarters, and instead of being fed by the scoop-shovel rule, they see but two ears of corn each daily. They are getting most of their food in ensilage fed to them twice per day and I am sure you would pronounce them as fine a lot of Berkshires as you ever saw in any breeders' yards. That is what otner visitors at the farm say.

These sows, fifteen in number, are late May and June pigs, and were summered without one ear of corn up to the first Monday in September, when the boys began feeding them corn cut from hill. They will average over 300 pounds and are only in good thrift. We sold twenty pigs first of the month that came in February and May, about half and half on oates named; they averaged 203 pounds each, and got no corn or corn product from May to September.

We have yet thirty pigs of May and June age that will average over 200 pounds. Killed one of them last week, not the largest, that weighed 220 pounds after being bled.

My statement that cheap corn makes cholera is being proven all over the corn belt this fall. In our county hogs are dying at a great rate. I say "makes cholera." It does not make cholera, but it does make hogs die, and with the average farmer, a dead hog is of necessity a cholera hog, while the truth is the hogs are starving to death with plenty (such as it is) before them at all times. When we consider that corn is the richest feed we have on the farm for producing fat, and very low in the elements of growth, is it to be wondered at that our exclusively corn-fed pigs and hogs die when the growth element in food is as necessary to them (and more so) than the fat-forming matter?" "BUFF JERSEY."

Nov. 29, 1902.

HEALTH IN HOG YARDS.

During my fifty years' experience in raising hogs on one farm I have had but two visits of cholera. This freedom from disease I believe to be due to clean yards, careful feeding and breeding from matured stock, writes W. Z. Swallow, in "Farmers' Guide."

My lots are plowed and sowed to some kind of green crops once or twice a year. Plowing turns up new dirt and freshens the pasture. Rye, oats, cane, pumpkins and corn are planted at different times. Rye makes a good early and late pasture. Where it can be done it is a good plan to change from one lot to another. By this means the pasturage in one lot can be kept growing while the hogs are in the other and a continuous supply of green feed is provided, which is not possible with but one lot. Green feed is cheap feed and healthful. I raise from fifty to a hundred loads of pumpkins every year and these come into play after the pasturage is gone. Pumpkins are valuable in a good condition of the bowels. In one of the outbreaks of cholera in my herd all the older hogs were saved, I believe, because they were fed liberally on pumpkins and no other feed.

Much of the health and thrift of a pig depends on a good, warm, dry place to sleep, one in which there are no cold drafts, and a clean place to feed. I prefer a feeding floor, so the hogs will not be compelled to eat too much dirt. Troughs for feeding slop should also be on a feeding floor. Keep your feeding floors clean, provide fresh, clean water and a good place to sleep and the pig is likely to be healthy.

Do not keep too many hogs together. I think it a mistake to try to feed a hundred pigs together. I do not want more than twenty-five and fewer than that is better. I think much disease is caused by having too many pigs in one bunch. The weak ones are crowded away from the feed, get run down and out of fix and become easy subjects for disease. When a pig gets run down and out of sorts the best thing to do is to kill and burn him. I think that the best medicine for the herd.

Do not allow hogs to pile up and sleep around straw stacks in winter. Tney get too warm and sweaty, come out steaming, and if cold breeze strikes them they are apt to take cold, which leads to lung fever or some other disease.

Some one will ask how I feed to keep hogs in good health. I don't feed any cholera cures. I feed salt and wood ashes dry in a trough. Sometimes I feed a little turpentine in slop to kill worms in pigs. Kerosene is good in slop, and there are lots of other good worm remedies. It has been my experience that when much oats is fed to pigs there will be very little trouble with worms. My main feed in winter for old hogs is corn and oats. Pigs need slop. Shorts or ground wheat and oats make a good slop, and a good bone and muscle-maker. A little corn is good for a change. I do not feed shorts and soaked corn at the same time.

Always have plenty of clean water, and never let hogs drink from stagnant ponds or water holes. Have the yards well drained, so there will be no mud holes. Mud and dust are equally bad. Whitewash fences liberally, and don't be afraid to spill a good deal of it as you go along. Lime is a good disinfectant.

I see lots of farmers who raise hogs and turn them off at from 11 to 18 months old, weighing 250 pounds. That does not pay ten cents a bushel for the corn the hog eats. It does not pay to throw corn into a pen where the mud is knee deep. Give the pig a chance and he will raise the mortgage on the farm.

W. Z. SWALLOW.

SOWS EATING THEIR PIGS.

A correspondent of Kentucky enters a loud complaint about so many of his sows being addicted to the bad habit of eating their own pigs as soon as born. They rarely do it in the Summer time. It is in Winter and Spring when they are at their worst in this respect. He has a good corn farm and makes it a business to turn his corn into pork. He grows his own pigs and has the pigs drop whenever they will, as he keeps a boar purposely. Another trouble is, if he watches a sow when farrowing and takes the pigs away from her he cannot bring them up by hand, for tney nearly all take the scours and die. This state of affairs is a sad drag upon his business, and he wishes to know how to avoid it, writes Dr. G. Wilson, in "Practical Farmer."

He fails to tell how he has cared for his hogs and how he has fed them; but this is in a manner explained by the fact that he has a good corn farm and that he grows corn and makes pork. This is his main hog food and I dare say all the kind of grain the animals get. He "corns" his pork before it is grown. In Winter, and before grass grows in Spring, his brood sows are on an all corn diet. When the pigs are born they are poor, weak things because the dam has not been fed anything to make muscle and bone for them. Corn as a food is heating. When parturition arrives the dam is in a feverish condition, the act of parturition more difficult than when she is in a normal condition, the bowels constipated and she is half-crazed and ready to do anything for relief. She would eat a raccoon or skunk as readily as her pigs, if one should come in her way. It is not her pigs that she craves particularly that causes her to eat them. It is an indefinite "something" to relieve her distress, and her pigs are the only "something" available. They are particularly nervous at such times. One was known to wrench an ear off another hog; and to catch and swallow a passing rat. Generally the cause is an exclusive corn diet. Swine are grazing animals and need grass or hay, as other grazing animals do. Who would expect his horses, cattle and sheep to flourish if he gave them nothing but grain? A sow destroying her young is directly chargeable to man's mismanagement of her. Pregnant sows should have continuously, an easily digested, nutritious diet; not of one material, but of several. A little of most any grain and grass or clover in Summer, and in Winter chopped hay or clover in a damp feed, bran, middlings, oilmeal, beets, turnips, mangels, carrots, etc.

Surely here is a list of ordinary foods to select from that will keep breeding sows in normal condition and obviate their pig-eating propensities. They should be allowed a range for exercise, have access to a mixture of salt and ashes, and charcoal, and have a warm, dry bed. When one shuts them in a pen and feeds them nothing but grain and house slops, he may expect his attempt to grow pigs will be a failure. An excessive grain diet keeps the system in a feverish condition and creates constipation. This condition causes the mammary glands to be sore and tender, and when the young offspring try to suckle, there is immediate "trouble in the family," and the dam's wrath is only appeased by her act of cannibalism and one or more of her young is sacrificed on the altar of ignorant feeding. The reasons the inquirer has poor success in raising the pigs by hand, taken from the sow to keep her from eating them, are, first, they are poor, weak things owing to the wrong feeding of the dam when carrying them; and, second, he probably fed them skim milk, and perhaps cold at that, when their little stomachs required full milk of the best quality, to be fed warm for the first two weeks. And by the way, I hear of many pigs taken from the dam when four to six weeks old and fed "water separator" milk, dying of scours. As this milk is always half water, this is not to be wondered at. In drinking enough of this to get sufficient nutriment to sustain them, the large volume of water they take, purges them.

RAPE FOR NEXT YEAR'S SOWING.

A correspondent of Scott county, Ia., writes "Wallace's Farmer."

"I have read quite a few complaints in your paper about rape blistering pigs this year. As the dealers are insisting on farmers buying their seed now, would you recommend it for next year's planting?"

Most decidedly. We have gone to some trouble in investigating these complaints of rape blistering pigs. While many of our readers will not agree with us, we have come to the conclusion that the rape is not at fault. A great many pigs last year were broken out with some kind of eczema. A large number of such were at the Iowa fair and had never seen a rape field. We have heard of instances where the same phenomena occurred where there was a large amount of tall grass and some where there was no grass at all. We, therefore, urge the increased planting of rape next year, and while we are at it we may as well state the uses that can be made of it.

First, as recommended for the last two years, we advise plowing up the weed patches, the feed lots, and any other kind of waste ground and sowing them to rape as early in the season as possible. Do not turn the hogs into it until it is a foot high, then turn them on and keep it eaten down during the summer. Do not let it be much higher than that, as rape, especially in the southern part of our territory, is apt to become unpalatable when it becomes old. In the northern section this objection is not so great. It goes without saying that we do not advise sowing rape outside of these lots where farmers do not have something to eat it. We do not believe in growing anything for which the farmer has no use and of which he cannot make any use.

Where farmers want pasturage from the middle of July until late in the fall, we advise sowing rape in oats or spring wheat where these are not seeded down to clover and timothy. We would not advise sowing this with the oats but would drill in the oats and after they are three or four inches high sow rape and harrow it in with a light harrow. This harrowing will not hurt the oats and will cover the rape seed and will insure sufficient growth to enable it to furnish pasture after the oats are removed but not sufficient growth to interfere with the harvesting of the oats.

In the southern section of our territory, say in southern and central Illinois and Missouri rape can be sown after winter wheat is removed where it has not been seeded down or where a stand has not been obtained. This will furnish pasture for hogs, sheep, or cattle, and plenty of it.

Rape may be sown in orchards that have been cultivated as young orchards should be up until the middle of June. At the last cultivation rape can be sown and this will furnish a magnificent hog pasture, and if the orchards are coming into bearing will furnish a market for windfall and wormy apples to the benefit of the hogs, the orchard and the crop of apples in the neighborhood.

Again rape may be sown in the corn at the last plowing. It will not make much growth where there is a large crop of corn, but that growth will be worth 25 cents per acre if it grows at all; 25 cents represents the cost of the seed. It will make considerable growth where there are missing hills or where for any reason there is no stand of corn and will furnish an excellent supplement to the dry cornstalks where these are pastured. Where it is intended to cut up the corn, it would hardly pay, as the shocks are seldom removed in time to utilize the rape which will die when the ground becomes frozen solid, but not before. Of course we would not advise this where it is intended to seed the ground to winter wheat.

It will be seen that there are plenty of places where a farmer can use rape and we consider it one of the most profitable catch crops that can be grown on the farm where the farmer has stock to consume it. Do not be afraid of Dwarf Essex rape polluting the land. It is a biennial and will not stand the winters in any part of our territory except in Washington, California, and probably southern Texas.

A NEW HOG DISEASE.

A dispatch from Columbia says that a strange disease which is killing hogs in Boone county, Mo., at an alarming rate, is puzzling the veterinarians. Hogs are dying in every part of the county and no cure has been found.

Fat hogs are attacked with a wheezing cough, which can be heard at a great distance; they grow thin and finally die a few days after the disease sets in. The disease appears to be contagious, as it is spreading rapidly and exterminating whole herds with the rapidity of cholera.

On examination the lungs of the dead hogs were found to be full of small white worms about the size of a sewing thread, and from one-quarter to seven-eighths of an inch long. The lungs are practically filled with these worms and in some cases the worms attain much greater size.

When the disease first broke out it was thought by the veterinarians that it was caused by breathing worm eggs into the lungs, where they were hatched by the heat of the blood. Owing, however, to the great prevalence of the disease and the rapidity with which it is spreading, this theory has been abandoned, as the disease is evidently contagious.

In some cases the hogs, while suffering from the disease, are extremely vicious, and will attack with great fury anything that comes in the way. They will also engage in bloody fights among themselves, killing many in this way.

The disease started near Deer Park, which is in the southeastern part of the county, and which is also the scene of the greatest losses. One man in that section lost 40 head in one day and many others lost as many.

Owing to the rapid devastation of the disease and the large territory over which it is ravaging, no correct figures can be given as to the amount of loss, but conservative hog growers place the figures at between 900 and 1,100 in Boone county alone, and Callaway county has, perhaps, lost an equally large amount.

BRISTLES.

The bacon and hams must be produced on cheap food. Let the hogs utilize the clover pasture; 10 per cent less grain is required for given gain when the hogs run on pasture, if but a three-quarter grain ration is given with the grass. The hogs gain practically the same amount per day as when given a full grain ration without the grass.

Utilize the pumpkins, apples and other fruits and vegetables that are too often wasted. The articles make capital food for the swine and they are cheap and abundant at this time of the year. Feed these succulent and bulky foods as a dessert after the usual grain ration has been eaten. They will not interfere with the amount of grain consumed, but will increace the appetite and tone the system. If the coarse foods are fed before the grain the swine will fill on these and not eat much grain.

Let the pigs in the orchard after apple picking, to gather the fallen fruit.

Provide each pig pasture with a good shelter and nest. The pig likes to sleep outside on clear nights, but when a cold rain comes he likes to be where it is warm and dry.

Hogs will grunt their satisfaction over a pumpkin feast. When fed pumpkins less corn is required and they eat their corn with a better relish, it seems.

A variety in his diet suits the hog. He will eagerly devour small, unsalable potatoes and apples if given a chance.—Farm Journal.

The Shepherd

EXPERIENCE WITH ANGORAS.

For the information of persons living in eastern Kansas I wish to say that after two summers pasturing on native grass with Angora goats, I am pleased to say that the grass has thickened up and all the weeds on my place are nearly exterminated. This statement will scarcely be credited as strictly true by sheepmen. I have been in the sheep and cattle business for years and know whereof I speak. The goat being a browser, does not bite the grass close off to the ground, but takes the ends of the weeds. The iron weed and golden rod can be utilized by pasturing with Angora goats, and thus a profit can be made from a pest. Goats will do well on weeds and grass and the idea they must have brush is a mistake.

For those who question the profit which can be made from the Angora industry, I wish also to state that I received 33c net per pound for all of the 300 fleeces which I sheared and they averaged nearly four pounds. I am not in a position to know whether this is considered a good price and a good yield, but I do know that it pays. Many of the fleeces weighed from five to seven pounds. Lice seem to be the most troublesome disease. I find that any wire fence which contains a square hole or mesh objectionable, as it allows the goat to put its head through the hole, but because of the horns the goat cannot get his head out again. Barbed wire wastes some valuable mohair, and spoils the appearance of the goat. Lice also hurts the mohair. Much material is pulled out by the feet and horns of the goat while they are scratching for the pest. The goats also get poor and the mohair loses its lustre. The lice can be killed by dipping.

I also find that the goat needs more room than the sheep in winter, as he is more selfish and quarrelsome. Many does abort where goats are crowded. I also believe that many kids are lost before shearing time by reason of the kids taking into their stomachs the long hair close to the teat of the mother. Gagging overcomes this to a limited extent, but much more care is required in looking after the little ones before shearing than after. The careless, shiftless, lazy farmer who is accustomed to let his cattle hustle for themselves had better not try the new industry. On the other hand the careful, humane, vigilant cattleman who believes that shelter is equal to feed in bringing his herd through the winter will find the Angora goat business both pleasant and profitable.—J. W. Troutman in American Angora.

Water under foot is a great detriment to sheep growing, hence it is best to keep sheep away from low, wet pasture.

No breeder has been able to raise all good sheep even from the most distinguished sires and dams that ever lived.

BREEDING PERIOD OF SHEEP.

To the old breeder of sheep but little can be said that will be new to him along the lines of the period of gestation among sheep. Beginners will be interested in knowing some things in this connection which are probably too often kept from them by writers on this subject because there is a feeling that all are posted. As a rule the ewe will be in breeding condition when her lamb is four to six months old, although this is not at all a certain indication of the arrival of the breeding season. The season of breeding with the sheep is only during the last half of the year with most breeds, says the "Live Stock Indicator," although there are breeds that breed twice a year. This season usually begins soon after the first cool nights in August, if there are any, or as soon as the ewe begins to build up flesh after the rearing of a lamb. The ewe that does not raise a lamb is not much more liable to breed early than the one that has suckled a lamb until the proper season arrives. The exact period of gestation with the ewe is twenty-one weeks, but it is more commonly figured at five months.

The great majority of sheep breeders do not desire lambs to drop in the winter time, hence they keep the sexes well apart until such a time as to have the lambs drop in April or May. This is a very wise plan where no arrangements have been made for keeping the yeaning ewes in a warm place during that season. The whole business of early lambs hinges on this very thing. No warm stable for ewes, no winter lambs. Two lambs dropped in February are worth three lambs dropped in May, and yet there are those who can make the May lamb come right along and be a close peer of his February brother.

The February lamb has the advantage over the May lamb in his ability to resist the ravages of the stomach worm which usually appears the latter part of June and July, but whose presence is not apparent until the month of August. This is an advantage that is worth something to the breeder where this parasite is prevalent.

It is far better to have lambs come later and be subjected to the dangers of the stomach worm than to have them come into the world in the winter without having any means of protecting them from the storms which are prevalent then. There is a possible chance that a lamb will escape the parasites, but there is no chance for a lamb to live when exposed to winter weather during the first few hours of its life. We have tried both methods and have found out from bitter experience which is the better plan. We lost enough lambs in one night during a raging storm to build a good barn and we did not have to have the second dose to be convinced of this fact. If it is thought best to have winter lambs the stock sheep can be given less warm quarters and the warm quarters can be used for breeding ewes at lambing time. No adult sheep needs a warm place for herself if kept dry. Her wool will be sufficient protection from the cold, and the same may be said of the lamb that has attained the age of several weeks. Keep adult sheep dry and they will keep warm. Keep lambs warm while very young and they will pull through if other conditions are regular.

SHEEP HUSBANDRY.

The question of receiving the highest profit possible in sheep raising is not always answered alike by practical experience, for while some can and do make wool growing pay, there are others who barely make this pay for the cost of the feed. Of course if we can raise sheep so that the wool will pay for all the cost of raising the animals to a marketable state there is actual profit of a high order in selling the mutton, says S. T. Mainwring, one of Ohio's leading breeders in "The Farmers' Call."

In fact, a good many sheep breeders aim to do this, but the present tendencies in meat consumption hardly make this possible. The market demand is for young sheep or lambs and not for old mutton. The latter does not bring a good price in the market, and the demand is so limited at times that the markets are glutted with old mutton.

A good many lambs are held too long before being sold to make the profits as large as they should be. It should be remembered that the lambs should be sold when weighing between sixty and seventy pounds, for after that period they will degenerate in value so far as marketmen are concerned. Nearly all the food fed after that period will prove waste. It will be impossible to get it back in mutton, for the price of old lambs will decrease faster than they will gain in weight. By selling the lambs at once and putting some of the ready money immediately into producing ewes the flock will be increased in a short time. It is by this system of constant breeding and quick turning over the money that the sheepmen must expect his large profits. The wool after all is only of secondary importance, except on the great western ranges, where the cost of food is purely nominal, and a thousand sheep can be kept with only a little more difficulty than is required for a hundred on cultivated farms.

AN INTERESTING EXPERIMENT.

The following is from a late bulletin of the Wisconsin Experiment Station on sheep breeding and lambs of various breeds:

"Southdown ewes dropped 78 per cent of strong lambs while the Shropshire ewes dropped 59 per cent. The Shrop-Merinos 73.4 per cent and the Dorset-Shrops 60 per cent of strong lambs, the latter being but a trifle ahead of the Shropshires. The Shrop-Merinos, however, have the smallest percentage of weak lambs, which would in average vitality of lambs at birth make them practically the equals of the Southdowns. The Shropshires, however, of the breeds and crosses mentioned show the least vitality in their lambs at birth.

"The Shropshire ewes were found to be easily in the lead in percentage increase for the three years above mentioned, with the Shrop-Merinos a close second. As 19 per cent of the lambs dropped by Shropshire ewes were triplets this may in some measure account for the large percentage of weak lambs from the ewes of this breed, though the Shrop-Merino ewes with 15 per cent of triplet lambs had the smallest percentage of weak lambs of any of the breeds or crosses. None of the Southdown ewes gave birth to triplets, though the ewes of this breed gave the largest percentage of twins of any breed or cross. It will also be noticed that 13.3 per cent of the whole number dropped were triplets, 19.1 per cent were singles and 67.6 per cent, or over two-thirds of the whole number, were twin lambs.

"Single lambs are much larger at birth on the average than twins and twins are much larger than triplets, the difference in average weight between single and twin lambs being 1.44 pounds and between single and triplet lambs a difference of 2.16 pounds, yet from lamb feeding experiments conducted at his station (16th Ann. Rep., p. 51) it was found that until weaning time twins made equally as good gains as single lambs."

Sheep feeding in Montana is assuming large proportions. They are fed 60 days on alfalfa, and then topped out for 30 days before marketing. Over 200,000 were thus fed last winter on the Yellowstone river, and 30,000 on Milk River.

SHEEP NOTES.

The ram needs to be changed every two years at least and fresh blood infused into the flock.

Those who say that sheep do not pay, never kept a paying kind or gave them the proper attention.

If you want good, strong lambs, feed the ewes right. You can't expect strong lambs from weak ewes.

When you buy a sheep for breeding purposes endeavor to get one that is better than the best in your flock.

Wool is a product from feeding, the same as flesh, and a flock must be well fed to produce the most wool.

A lamb that has become chilled is very likely to become constipated, especially after the warm bath treatment.

It is not good policy to feed well and give good shelter and then allow our sheep to drink ice water and cool off.

The Markets

WHEAT—No. 2 red at 71@71¼c E. side and quotable at 70c W. side; No. 3 red at 68@69c W. and 68½@69¼c E. side; No. 4 at 55c to 60c; No. 2 hard at 69½@70c, and ordinary quotable at 67c; No. 3 hard at 61½c for poor to 64@68½c; No. 4 hard at 58@64c. Skd. in elevator: No. 2 red a 69c; No. 3 red at 66c; No. 4 at 62c.

CORN—Mixed yellow and white at 45c for No. 2, mainly at 42⅝@43c for No. 3 and 36@40c for No. 4 del. to or in the house. All this is for delivery on Dec. contract, where the corn grades No. 2 on delivery. An exporter, too, No. 3, destination weights, at 44c, and a few cars otherwise sold at 43@43½c for No. 3.

OATS—No. 2 at 34½c; No. 3 at 33@33½c; No. 2 white at 35½c; No. 3 white at 34@35c; No. 4 white at 32½@35c, latter fancy.

RYE—At 44@48½c.

BARLEY—At about 48@61c.

FLAXSEED—Nominal a $1.11@1.12.

BRAN—Eastern shippers holding off for lower prices because of the advance in freight, but their bids for bran at 67c in large and 68c in small sks., E. trk. basis, fail to purchase, as mills well sold ahead, and will not name a selling price below 70c in large sks. A car mixed feed in 100s sold E. side at 73½c. At mill bran sells at 70@73c and ships at 85@90c.

BUCKWHEAT—Eastern at $3.00@4.

HAY—Timothy on E. side—Choice at $15; No. 1 $13@14.50; No. 2 $12@13; lower grades at $8@10. Clover $13 for choice, $12@12.50 for No. 1, $10@11 for No. 2; light clover mixed $10@11 and heavy $6@8. Prairie on W. side: No. 1 $11@11.50; No. 2 $10@11.

STRAW—Wheat $5; rye $6.50 for new and $7@8 for old.

BUTTER—Firm. Creamery Extra 29c; firsts 25@26; seconds 22@23c. Dairy—Extra 21@22c; firsts 18@19c; grease 4@5c. Ladle-packed—Extra 18@20c; firsts 17@18. Country—Choice fresh 16c; poor to fair 10@15c. Renovated—Good 20@22c.

COTTON—Spot market quiet; ordinary, 6 11-16c; good ordinary, 7 5-16c; low middling, 7⅝c; middling, 8c; good middling, 8¼c; middling fair, 8¾c. Tinges and stains ¼@⅜c off white.

WOOL—Missouri and Illinois—medium combings and cloth mxd., 19½@20; clothing 18½@19; low and braid 17½@18; burry and clear mixed 17@17½; burry 15@15½; hard burry 11@12; light fine 18@18½; heavy fine 12@15; light lamb 17½@18; heavy and coarse lamb 15½@16.

LIVE POULTRY—Staggy young roosters 9c; chickens, old hens and heavy young 9c; old roosters 5c; broilers, 2-lb. and under, 10½c; turkeys 10@11c. Ducks 12c. Geese 9c. Live pigeons and squabs, per doz., 75c.

BEESWAX—Quiet a 28½c per lb. for prime.

HONEY—Quote: Comb—Dark at 10@11c; choice at 13@14c; choice Colorado white at 14@16c, or at $3.25@3.75 per case. Extracted and strained—Southern in bbls. a 5½@6c; in cans 6¼@6½c; California in cans at 7@7½c.

HOPS—New—New York at 35@38c; Western at 30@32c; Bavarian at 45@47c.

BEANS AND PEAS—Quote, from store: White $2.35@2.40 for machine-picked. Dried green peas—Scotch at $1.70; split peas at $2; blackeye at $2.25; California pink (per lb.) at 3¾@4c; New York kidney 6c; Lima beans 5½c; lentils 4½c.

BROOM CORN—Nominally firm. Per ton; Fair $55@60; common $40@50; choice at $65@75.

POP CORN—Selling on cob at $1 to $1.10 per 100 lbs. for pearl; mixed at 60c to 75c.

PECANS—5½@6½c.

PEANUTS—Red 1½@2c; white 2¼@2¾c.

WALNUTS—Selling at 40c per bu.; California a 10@10¼c for hard shell and 10½@10¾c for soft shell.

CIDER—$3.50@$6.50 per bbl.

HICKORY NUTS—85c; large $1.25@$1.50 shellbark.

SORG. CANE SEED—90c per 100 lbs.

SORGHUM—Prime at 22@24c per gal.

DRIED FRUIT—Evaporated rings at 4c to 5c; sun-dried quarters 4c to 5c; sun-dried peaches 2@2½c.

MAPLE SUGAR AND SIRUP—New maple sugar 8@12c per lb.; Canadian 13c; maple syrup 60@90c per gal.

GRASS SEED—Timothy at $2.90@3.40; clover at $7.50@10; new red top at $1.25@6.

APPLES—Per bbl.: Ben Davis, poor, $1; fair to good $1.40@1.50; choice, $1.60@1.75, and fancy up to $2; winesaps, poor, $1@1.25 and choice to fancy $1.75@2.25; willow twig and Roman Beauty $1.50@2.50; other varieties from $1.50 to $2.50, according to condition. Bulk at $1@1.25 per bbl. on trk.

GRAPES—Catawba at 20@21c for pony basket for choice.

PEARS—Keifer $3@3.50 per bbl. choice.

CRANBERRIES—Jersey in a jobbing way at $8@8.25 a bbl. Late varieties at $3.50@9.

POTATOES—Northern on trk. offered at 44@48c for common to fair to 45@50c for choice to fancy white stock; poor stock less; Nebraska and Iowa early Ohio 40@45c.

ONIONS—Northern red at 65@70c sacked to 63@65c del.; yellow 58c; North Missouri at 35@45c, according to condition; white 65@70c.

SWEET POTATOES—Bermuda at 70c; Nansemond at 70@80c for yellow to 85@90c for red; queen a 60@65c per bu. box.

HORSES—The market opened with a much lighter run than on Monday a week ago, a result due to a combination of forces, but principally to the reason that the close of the trade last week was not encouraging. Horses are so high in the country that consignors will not take the chances on anything but a promising market, and a fluctuation has now more effect upon supplies than ever. At any rate, the trade this week starts out irregularly. There is lack of substantial demand, which is absolutely necessary at this time to produce an active market, and with the Eastern trade also acting in a backward way the shortcomings of the demand are doubled. There was little of competitive energy expressed in the opening market for the week. Supplies, as to quality, were fair, but no class of offerings seemed to enlist keen activity from the demand. Trade moved along in a moderately active way, the few Southern buyers who were on the market buying with decided conservatism. The reason of the lack of greater demand at this time is laid to the fault of the approaching holiday season. At the present time the market is on a steady basis with the week before last, which is equivalent to a $5 to $10 reduction from the earlier part of November.

MULES—When the mule market opened Monday morning, there were few outside buyers on the market, but there did not seem to be any disposition on their part to trade actively and the early outlook was for a slow market. The order demand, which is often one of the features of a week's opening trade, was also quoted small. Some Eastern buyers were on hand, but they were slow to take hold at the prices asked by the dealers. High prices are claimed to be the greatest drawback to the mule trade. The scarcity in the country makes them high at market, and when buyers come from the East and South they are surprised at the high figures asked and are often unwilling to purchase at all. It was hardly as favorable an opening as last week, at least the symptoms did not appear as good. With only about four carloads on the commission market, the opening was reported very slow, as there was nothing in the working of the outside market to communicate a feeling of activity to first-hand arrivals. Very few sales were made up to noon, dealers being indifferent, and rather preferring to await what the Southern and Eastern demands would bring forth.

ADDITIONAL MARKETS ON FOURTH PAGE.

DE SOTO FARMERS' INSTITUTE.

The Farmers' Institute held in De Soto Nov. 21-22, was most interesting and well attended. The program provided a varied selection of subjects, which were ably handled. Among those who contributed towards making this meeting a great success were the following: Mayor Lawson, who made the address of welcome; Hon. H. H. Weaner responded with a graceful tribute to the town of De Soto; Prof. C. H. Eckles of the Missouri Agricultural College spoke on "Feeding and Care of the Dairy Herd, and the Value of Ensilage," and was most instructive in every detail; Prof. R. W. Clothier of the Cape Girardeau Normal School gave a comprehensive talk on growing alfalfa; Prof. Duncan of North Carolina spoke upon the need of fertilizing; Dr. D. F. Lucky, State Veterinarian, had for his subject "Contagious Diseases Among Live Stock;" Dr. J. C. Whitten, Horticulturist of the State Experiment Station, had a very instructive address on "Orchards," and Dr. Detwiler of the State Board of Health gave a scientific exposition of the methods of checking bacterial growth and the relation of water to disease.

Farmers who failed to attend lost an opportunity of receiving much practical information.

OKLAHOMA NOTES: ALFALFA AND OTHER CROPS.

Editor RURAL WORLD: I've "riz" up to let your readers know I'm still in the land of the "livin'," and helping to hold down our little sand hill claim, which has given fair returns for labor invested. We have been exceedingly busy ever since we came here; but I believe this year has been the very busiest one we ever had.

We raised about eight acres of cotton, and old cotton farmers say it takes just thirteen months of one year to complete a cotton crop. We could not, however, give all of our time to this crop, as we had thirty acres of corn and seven acres of good wheat, which we are now feeding to our poultry. We have mowed our alfalfa four times, getting a good yield each time; besides our truck patches, which have required their share of labor and time.

To return to the cotton subject. Our hardest task is before us now, as we have still two bales in the patch to gather, that is, if it ever stops raining long enough to allow it to open and the ground to dry. It is now the 23d of November, and the greater part of our corn is not gathered. These delays make one tired, but there is no way out of them except waiting "till the clouds roll by," and then hire sufficient force to wind up the business in a short time. We have, up to the present time, sold four bales for $175.05, and our expenses were $30.78, leaving a margin of $144.27, which pays well for the part we have taken in the work of making and gathering the crop. As more or less of the cotton still in the patch is damaged, we do not expect to realize as much from it as we did on what we have sold, and do not think we will get more than $16.00 per acre. It is our intention to plant twenty or thirty acres next year, mostly on new ground, so that the labor will not be as great as if planted in old ground. However, we do not intend to go into cotton raising as a business, but will continue to diversify our crops, and raise as many cattle and hogs as we can care for.

At this writing we have thirteen head of cattle and twenty-one head of hogs, all doing nicely, but we could feed more, as we will have a surplus of feed, which, however, we can sell to advantage.

We think our alfalfa has been our best investment this year, as from four acres we have cut twenty-two tons, or hired it cut at sixty-five cents per acre, four times; which makes the expense of cutting $10.40. At the rate of $6 per ton the alfalfa was worth $132 minus the expense would leave us a clean profit of $121.60, or $30.40 per acre. This very nearly doubles the cotton profit, with the advantage of growing it with less labor and its being a permanent crop. Now it is six inches high, making a fine pasture for all our stock, including about twenty head of hogs. This crop was seeded two years ago last April on a black, rich, deep bottom soil. The soil was well broken and then harrowed until every clod was thoroughly pulverized and then reworked by reversing the all-steel lever harrow. The result was a perfect seed bed, and the seed was sowed by hand broadcast, twenty pounds per acre. After harrowing and dragging we let Providence do the rest. There was plenty of rain to bring the seed up to a fine strong head and keep it growing. We cut it three times the first year, and last year was a record-breaker as regards drouth, but alfalfa is the greatest drouth resister I've ever known, and farmers and stockmen can depend upon it.

The eleventh report of our Agricultural Experiment Station, extending from 1901 to 1902, says regarding the alfalfa crop:

"The farmer who knows the true value of alfalfa and has the ability to raise it has a great advantage over his fellows who do not. The time is not far distant when the greatest factor in determining the value of a farm will be its adaptability for growing alfalfa. Under no conditions nor with any combination of feeds where alfalfa is not included, can the animal products of the farm be produced at the minimum cost, be they beef, pork, wool, mutton or dairy products. The alfalfa crop of 1901 sold as hay in the winter market at a cash value of $30 to $40 per acre. Where properly utilized it has returned a greater value than the above when fed on the farm. For instance, a daily feed of 15 pounds per head, with grain to fattening steers have saved one-fourth to one-third of the 90-cent corn, and where fed to young, growing stock the showing is still more favorable."

I am prepared to say it will give you a far greater profit than any other crop and seed according to directions given above, and success is sure if your ground is free from crabgrass, its worst enemy. Still it rains, and from an all day's fog and drizzle it has gradually drifted into a regular downpour, with prospects of its lasting throughout the night. How glad we will be to see the sun again. Its bright rays will indeed be welcomed by both man and beast.

We have had no cold as yet, and my garden and flowers are as bright as one could wish, but I must soon bid them a last farewell, as their beauty will soon only be a memory.

I read Ina May's "Huskin' Bee" with growing interest, as I never attended an occasion of that kind and I think she deserved the prize. I look forward each week for the coming of the best farm paper published—the RURAL WORLD—and should we miss a copy there would be considerable disappointment manifested.

Next Thursday will be Thanksgiving and I hope all feel as I do—that each one of us has much to be thankful for, and feel this not only on special days, but all the time. "A. GREENER."

Cleveland Co., Okla.

ANOTHER MISSOURIAN AT HOME.

Editor RURAL WORLD: I have just finished reading Mr. Thomas Lawson's letter in the RURAL WORLD for Nov. 26, and I want to congratulate him most heartily for it, as it is so true to life. We have, I think, one of the best states in the Union, but it contains too many mossback farmers with their scrub cattle, razorback hogs and fogy methods of farming this rich soil.

Too many of our farmers devote too much time to politics and trashy literature and wholly neglect agricultural journals and books. Too many men who do nothing themselves, try to discourage and retard the good others would do. However, this class of farmers must vanish and give place to men of brains and energy who are making our dear old state foremost in the Union.

I am glad to say that I am a Missourian, born and raised right here in Lawrence county, and it is one of the best fruit and mineral regions on the globe. Many of our young men have left the farm for the city; but it frequently happens that, like the prodigal son, they are glad to return to their old home. I read a short sketch in the RURAL WORLD not long since, entitled "Stick to the Bush," which can be applied to these young men who too often leave a full bush of fruit before they have finished it; or, rather, leave the dear old home expecting something better. Young man, my advice is to stick to the bush—home, sweet home.

Let us hear from Brother Lawson again. E. N. HENDRIX.

Marionville, Mo.

TENNESSEE NOTES.

Editor RURAL WORLD: The weekly visits of your valuable paper are more and more appreciated as the days come and go.

The Nov. 26 issue is especially good and instructive. The study of the warmly appreciated man, Henry Shaw, and his beneficent work during a long and useful life, full of good deeds, is an inspiration even to a man of age and decrepitude like myself.

Prof. Mumford struck a happy note in the music of farm life in "Education for the Farmer;" but it is a fact greatly to be regretted that in these days when the very best of agricultural literature is almost thrust into our very brains, the majority of the farmers of our country, which is a land of such astounding possibilities, still cling to old methods and preconceived notions so as to make the work of dislodging them an arduous task. However, it can and must be done. And I am glad to say that it is being done.

True, the process is laborious and the steps forward are made slowly. But to every observing mind the fact is patent that the efforts of COLMAN'S RURAL WORLD are making themselves felt more and more as the years come and go. The same may also be said of other agricultural journals of like character. While we progress slowly, the advance made is of inestimable value to our great and beloved country.

"Water dropping day by day,
Wears the hardest rock away."

And the same is true regarding our efforts to improve the conditions of farm life among our fellow-men.

Here an apostolic injunction is in point; "Let us not weary in well-doing for, in due time, we shall reap if we faint not." Our success pivots upon the last sentence of this inspired word of encouragement. I beseech you then, brother farmers, "suffer the word of exhortation."

"Some Odd Notes," from our esteemed friend, Mr. Lyon, contain much that is good, and his "Notes From an Ohio Farm" are always helpful.

Mr. Lawson gives a rather gloomy picture of the farm element now in the ascendency in "Grand Old Missouri." Mr. Lawson is to be commended for his evident candor. In converting some people from the "error of their ways," they must be hit, and hit hard. What else could avail among a people whose hearts are set "like a flint" to tread "the way their fathers trod." Then, too, Mr. Lawson is a man possessed of characteristics akin to Bible biographers. It availed not that David occupied the throne. The facts of his life would—must be given. Achan, in Israel's camp, and Ananias and Sapphira among the early disciples, were treated with equal fairness. How unlike some biographies of our time. Lawson is excused (for his candor).

P. S. GARMAN.

Lawrenceburg, Tenn.

CRAWFORD CO. (KANSAS) NOTES.

Editor RURAL WORLD: As you have not heard from Crawford county for quite a while, I will pen you a few lines. We have had a very wet season, so wet that corn could not be cultivated as it should have been. Some fields were cultivated once only, consequently the corn is poor on this ground, but where the corn could be cultivated three or four times the crop is a good one. I hear some talk of 50 to 75 bushels to the acre, so we have a good average crop after all. The hay crop was good, but considerable of the timothy died out from the effects of drouth a year ago.

Next comes the wheat, which was a most excellent crop could it have been cut; it was so wet that people could not get in the fields, consequently there was much of it lost. Some farmers got their crop all cut, some lost five or ten acres, some 40 to 50, and I know one man that lost 140 acres that would have yielded from 20 to 30 bushels to the acre. The wet weather has caused a great loss to farmers of our county. I hear men say they made more money during the drouth a year ago than they did this year, but I know that I did not, although I lost considerable this year for the want of help. I don't know what the farmers of this country will do for hired help; it seems they can't be had for love or money. This is the only fault I find with the great prosperity we enjoy; but we should not expect everything perfect. There is a great deal of real estate changing hands in this county at advanced rates.

Stock of all kinds is looking well, but stock cattle are selling rather low. Plenty for sale, but not many buyers. Hogs are a little scarce, but no cholera to speak of. Horses are in good demand, especially heavy draft, the heavier the better. Butter and eggs are bringing good prices. Butter fat at the creameries will realize 24c this month; eggs, 20c; potatoes, 40c. We had a Farmers' Institute at Girard. The attendance was very good, although there are a great many farmers that did not have time to attend who should have been there. There were a number of papers read on different subjects. Your humble scribe read a paper, "Question: Is the Creamery a Benefit to the Farmer?" There were also two professors present from the Agricultural College of Manhattan. All present enjoyed a good time.

Girard, Kan. H. N. HOLDEMAN.

THANKSGIVING.

Editor RURAL WORLD: The melancholy, rainy days have come and it is too wet for outdoor work so I shall write up a few items and Thanksgiving reflections for the RURAL WORLD.

We have had a very mild dry autumn no heavy frosts in this locality yet. Fall wheat is looking well, though the Hessian fly hurt it some. Corn, potatoes, turnips, etc., are being being gathered and are making a fair yield. Taking all in all we have fair to good all round crops this year and have every reason to celebrate with joy the Thanksgiving of 1902. What a contrast to the same anniversary in 1901, when the drouth plague smote our fair land and how awful it would be had the Providence of God allowed the great drouth to continue this year as some pessimists foretold! Alas, one shudders to think of it.

Periods of adversity and misfortune are quite often as useful and salutory for a nation as an individual. When a people grow good crops and reap big harvests regularly they fail to properly appreciate the heaven-sent blessings and God is very jealous of all His gifts even those of Nature. Therefore He sometimes allows the fruits of the earth to wither and its springs to dry to show His supreme dominion over us, His creatures, and make us more thankful for the rains and harvests when they come.

The idea of setting apart a day of Thanksgiving each year to be observed by the people is not new. The ancient Jews had a feast corresponding to our modern Thanksgiving. According to the law the Jews had to repair to the Temple of Jerusalem three times each year. The first was the Pasch or feast of unleavened bread, and corresponded to our Easter. This was the greatest of them all. The second was the feast of weeks, corresponding to our Pentacost or Whitsuntide. The third was the feast of tabernacles and was celebrated with much light-heartedness and merriment when they gathered in the harvest and "the fruits of the barn-floor and the wine-press." This latter feast was typical of our Thanksgiving.

We read in our American history of how the Puritan colonists of Massachusetts were reduced to a diet of fish and water during the famine of 1623. Elder Brewster sucked clam shells for sustenance and even in such straitened circumstances was wont to give thanks to the Lord who had "given them to suck of the abundance of the seas and of the treasures hid in the sands."

As a nation we ought to be thankful for our abundant harvests, our immunity from plague, famine, war or any great national calamity, for the peace and healthy development in our New possessions and the happy termination of the great coal strike. We should also rejoice exceedingly that our President was spared in the late trolley car accident in Pittsfield, Mass.

Individually we all have much reason to give special thanks. It is certainly a very great privilege to be living in the greatest age this planet has yet known and have our waking senses quickened and warmed by the soft red glow of the rising sun of the twentieth century.

Man's knowledge of the laws of nature and his empire over the forces of matter was never more complete. This results in countless conveniences and luxuries prepared for our daily use. The wealthy can build up an earthly paradise from the material at hand and even the poor cannot fail to receive more or less benefit directly or indirectly from the material progress in which all are immersed.

The human intellect has a wider horizon now than it ever had before and knowledge is more widespread among the masses than at any time in all the ages of the past. This is a blessing to all, particularly the poor. The spiritual uplifting to which the President alludes in his Thanksgiving proclamation is also quite manifest. Christianity has spread into every clime and nation and girdles our globe with its world-saving influences. Men no longer consider religion as a beautiful legend; they are reducing it to practice in their daily lives and are employing the Golden Rule in their dealings with each other; they are beginning to realize their common brotherhood and destiny and their moral conceptions of justice, duty, truth, error, right and wrong are clearer and better than ever before.

It is well to eat, drink and be merry on Thanksgiving day but it is better to also pray and return sincere thanks to God for the innumerable blessings of the year and best of all to make every day of your life a day of thanksgiving. Unceasing gratitude is a duty the creature owes its Creator. Milton in his Paradise Lost, speaks of the angels in Heaven rebuking because they could not endure "to be forever praying and to never pay the debt immense of endless gratitude."

God's greatest mercy to His creatures is to allow them to contribute to His glory and permit them to do it intelligently and voluntarily. We can do this every moment of our lives by thanksgiving and praise. It is our happy privilege and duty.

Pulaski Co., Mo. GEO. KAVANAGH.

THROUGH THE SOUTH.

Editor RURAL WORLD: For more than a century past "the south" has been an appellation by which to designate the southern portion of the United States, which includes about one-third of the Union. From Nashville on south to the Gulf and Atlantic coast there is to-day a good reason for the term "new south," as used by the citizens of the various states. The mark of advancement is to-day everywhere to be seen in mammoth manufactories, the best systems of transportation, business development, more intensive agriculture, horticulture and truck growing, in a progressive, healthy condition. To say that the people of the south are not intelligent and persevering should not only be considered an insult to the southern people, but to every American citizen, north and south.

The objective point of the writer was to reach the Gulf, thence up and down the coast, and then through the interior of Louisiana, Mississippi, Alabama and Florida. Having but a short time in each place where I stopped, I had to think and act quickly. Of all places along the Gulf, Bay St. Louis, Miss., is the most beautiful, picturesque and inviting of any place on the coast. The town, of 2,000, is situated on the west beach of an elevation of 30 to 40 feet, overlooking the bay two to five miles wide at that point. The fishing and oyster boats can be seen in the distance at all hours of the day, either busy at their daily vocation or coming in with the spoils of their labor. At this season of the year the forest is in its autumn attire. Here is where the God of nature emptied the bounteous hand of grandeur in the mixture of evergreens and deciduous trees, shrubs, vines and plants. The entire family of the oak, live and water oak, beach, hickory, poplar, ash, elm, three types of the maple, sweet and black gum, cypress, three types of pine, red cedar, magnolia, bay tree, are represented. From the evergreens in the verdure of life to the deciduous trees now in the decline of the season radiate all the colors from deep green to purple, red and yellow. The gardens and lawns are decorated with summer and fall flowers. The winter vegetables are at about the same stage of growth as those of the north would be the second or third week in May. I got Japanese persimmons that weighed 12 ounces and quinces that weighed 22 ounces; the Satsuma orange that weighed eight ounces, select pecans that measured one inch to two inches.

Southern Alabama is especially adapted for growing peach, oriental plums, sweet cherries, quinces, grapes, figs, strawberries, blackberries, raspberries, watermelons and muskmelons, tree pomegranates, English and Japanese walnuts, English filberts and all vegetables. In short, the facilities are unlimited in this part of Alabama. S. H. LINTON.

Des Moines, Ia.

GROWTH OF RURAL DELIVERY.

The country in general is hardly aware of the rapid extension of rural postal delivery, a system destined to work important social and business results. It places the farming population, without trouble to itself, in daily touch with all the facilities of the post office department, which include the delivery and forwarding of packages up to a certain size as well as the handling of letters and publications. The general superintendent of the free delivery system, A. W. Machen, has published his annual report, and it is more valuable because he has managed the rural free delivery service from the start, says the "Globe-Democrat." Rural delivery in this country is practically but four years old. The appropriation for the fiscal year 1898 was only $50,000, and the number of routes then in operation was 148. For the present fiscal year the appropriation is $7,000,000, and the number of routes maintained is 11,650. Each day nearly 12,000 rural carriers make their rounds, covering 275,000 miles, an average distance for each carrier of nearly twenty-four miles. These carriers serve 7,000,000 of the rural population and traverse an area of 300,000 square miles, which is about one-third of the territory whose present population and topography entitle it to be included as soon as conditions are complied with and the government appropriation is enlarged.

In the Philadelphia "Press," whose editor is ex-Postmaster General Smith, appears an instructive estimate of the prospects of rural delivery in the near future. Within three years, it is predicted, rural delivery will be operated in an area of 1,000,000 square miles, or four times that of Germany. This service will require 40,000 carriers, and the gross cost will be $24,000,000 a year, a sum more than three times the size of the present appropriation. The annual deficit in the post office has been reduced from $11,000,000 in 1897 to $2,000,000 last year. Important regulations have been enforced by which second-class matter abuses have been reduced. Postal expenditures this year are estimated at $138,000,000, with another small deficit. Ten years ago postal receipts were $76,000,000, and expenditures $81,000,000. It is believed that by 1905 the annual expenditure will be $180,000,000, but that the deficit, by good management, will not be serious.

But nothing has yet been said of the increased postal business resulting from free rural delivery. As the Philadelphia "Press" truly remarks: "The farmers of the United States are entitled to the delivery of the mails, whether it involves a loss or not." It is gratifying to know, however, that rural delivery, as far as tested, has added to postal receipts at four times the former rate of increase in rural communities. The sale of money orders and registration fees are largely a gain. Pay of carriers at first $500 a year, has been increased to $600. Their compensation is moderate, while the 7,000,000 persons they serve at present are greatly benefited and highly pleased with the new system. It has been set in motion, with fine administrative ability, within the last four years, and will be pressed to its full measure of vast usefulness without delay."

Prospects were never better for the cattle business. Prices are steady and profitable. The population is growing. The range is disappearing. Cattle-raising on the farm saves big freight charges for grain and keeps up the fertility of the soil. Never again will the low prices in recent years be realized.

AUDUBON SOCIETY'S BILL INDORSED.

August Reese, secretary of the Audubon Society of Missouri, addressed the State Horticultural Society at Springfield on Dec. 4th on bird, game and fish protection. The Audubon Society's bird and fish bill was indorsed by the horticulturists, who pledged themselves to support it when presented to the legislature.

BUSINESS POINTERS.

S. B. Rohrer, Topeka, Kan., offers to sell and exchange 7,000 acres of land in Barber Co., Kan. He will accept half value in eastern land, residence property and stock. The land is in the wheat belt and is also excellent for stock ranches. This is a splendid opportunity for any one who wants to go west and grow up rich with the country.